British Colonies v. 7

OBSERVATIONS
ON
EAST INDIA SHIPPING;

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BEING A
COMPARATIVE VIEW
BETWEEN
THE FREIGHTS OF 1773, AND
THOSE OF THE SEVEN PRECEDING YEARS:
TOGETHER WITH
An ESTIMATE of what may conſiſtently
be ſaved on that head in future;
FRAMED FROM
An EXAMINATION into the preſent Coſt of Ships
of different Sizes;
Their EXPENCE during a Common Voyage;
AND
What Quantity of Goods they are capable of
ſtowing from the ſeveral Settlements.

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BRITISH MUSEUM

TO THE

PROPRIETORS

OF

INDIA STOCK.

THIS ſmall Treatiſe upon the State of your Shipping is humbly ſubmitted to your Inſpection. The ſubject has been agitated with ſome acrimony; and Gentlemen, after long and warm debates, have parted, confirmed in the different opinions they brought with them. The Truth cannot lay on both Sides. My endeavours, therefore, have been to purſue her under the guide of Experience, and a careful reference to facts; how far I have ſucceeded, Time will certainly determine: This, however, I will venture to aſſert, That no man can have a ſufficient foundation, on which to form a clear opinion on the ſubject, without going into ſome ſuch reſearches as I have done.

If the Inveſtigation here made meets with your approbation, I ſhall think myſelf fully rewarded for my trouble.

I have the honour to ſubſcribe myſelf, with great truth,

Your faithful,

Obedient, and

Humble Servant,

THE AUTHOR.

OBSERVATIONS

ON THE

PRESENT STATE

OF

EAST INDIA SHIPPING.

A GREATER number of ſhips have been employed by the *Eaſt India* Company, for ſeveral years paſt, than either the annual tonnage, or the neceſſary reſerve, to guard againſt thoſe unforeſeen accidents, to which all voyages are liable, required; and the modes of chartering them, ſo ſhort of the builders tonnage, to all parts of *India*; and of lading on the ſhips from *Bengal*, and the coaſt of *Coromandel*, and *Mallabar*; not more, oftentimes, than three fourths of the goods they were able to ſtow; are the miſtakes which gave riſe to all that public controverſy, which the ſubject has occaſioned.

Theſe errors had prevailed, from the time the ſhips were ſo increaſed in ſize, until laſt year; when ſome new regulations were adopted, with reſpect to the mode of chartering the ſhips.

It was the great increaſe in the ſize, joined to the unneceſſary increaſe in the number of the ſhips, that threw the Company into their preſent embaraſſment, and laid them under a neceſſity of reducing the tonnage. From whence this diſagreeable circumſtance ariſes, amongſt others, that, in the eye of the world, the trade wears the appearance of a very conſiderable reduction; whilſt the annual conſumption of the different ſorts of goods is as much as ever.

When the ſhips were firſt enlarged beyond that ſtandard which had prevailed for many years, ſeveral orders of Court were made, with an intent to confine the ſhips within 676 tons burthen; however, in 1766, an order paſſed to fix the length of the ſhips to 110 feet by the keel; but with reſpect to the breadth, the only reſtriction was, for the ſhips not to be narrower upon the beam than 34 feet. It was the latitude given in this order, I apprehend, that produced the large ſhips; and all thoſe various ſizes now in the ſervice: however, in *June* 1770, an order of Court was made to confine the length of the keel, as before, at 110 feet; but the breadth was directed to be no leſs than 35 feet, and no more than 36 feet, which was done to reſtrict the ſhips to two ſizes, one of 716, and the other of 758 tons burthen; but even this regulation has not been ſo ſtrictly adhered to, as every regulation ought to be; and if not adhered to, in my opinion, had much better been expunged.

The irregularity which has long prevailed in the dimenſions of the ſhips, from the power to enlarge them having been left, in great meaſure, to be determined by the caprice and whim of individuals, has been the real cauſe of the chartered tonnage remaining ſo long at the ſame ſtandard for all the different ſizes, as had originally been eſtabliſhed for ſhips of much ſmaller dimenſions than have been in uſe amongſt the freight ſhips for many years paſt. And this neglect to increaſe the chartered tonnage has alſo contributed to lead gentlemen into the miſtake of ſending out more ſhips every year than were ſufficient to bring home the returning cargoes.

If gentlemen in their inquiries latterly, into this ſubject, had not been hurried away ſo much by mere opinions; but only had adopted thoſe facts, which appeared from a careful inveſtigation, they would now have been more united in their ideas on this head, than they ſeem to be; for truth operates uniformly the ſame every where, and mankind ſeldom fail to yield a ready aſſent to her dictates, when they clearly appear from an appeal to facts.

It is the intention of the following ſheets, to endeavour ſo far to lay open the real ſituation of this buſineſs, that all who are, in any degree, intereſted in it, either as Proprietors, or as Owners, may be ſo thoroughly informed of the true ſtate of the matter, as to be enabled to judge of what alterations, or amendments, can conſiſtently take place in future.

The great queſtion wherein the Proprietors are concerned, I take to be as follows (*viz.*) What can reaſonably be ſaved in the freight department, when compared with what has been paid of late years on that account?

I am inclined to believe that the honourable the Secret Committee of the Houſe of Commons, from the information laid before them, gave into the opinion that a very conſiderable ſum, to the amount of 150,000 l. a year or more, might have been ſaved to the Company on the freight of the goods brought home, in the laſt ſeven years, from *India*, if thoſe meaſures pointed out in the reports, and in part adopted laſt ſeaſon, had been followed ſooner. And the idea, that a ſum, amounting for the laſt ſeven years to upwards of a million ſterling, might have been ſaved by a more prudent conduct in the management of the ſhipping department, does ſtrongly prevail amongſt the Proprietors in general at this day. The truth of this opinion is only to be diſcovered by a perfect knowledge of that quantity of goods, which ſhips of different ſizes are able to bring from the different parts of *India*, and from *China*; and from the fair and reaſonable equivalent for the riſk and expence incurred on a voyage of 16 or 17 months, the ſhorteſt period in which a voyage can conſiſtently be performed; and conſequently that period ſuppoſes the ſhip to be diſpatched from *India* before the demurrage commences, which it always does at the end of four months from the time of the ſhip's arrival at her conſigned port in *India*: therefore the freight to be paid by the Company muſt amount to ſuch a ſum as ſhall, on examination, be found to be equivalent to the riſk and expence the owners are at upon a voyage of 16 or 17 months, and at the ſame time a voyage wherein no extraordinary accident ariſes; becauſe whatever ſum ſhall become due to the owners, more than the amount of the freight, can only be on the ſcore of demurrage, which increaſes in proportion to the ſhip's detention in *India* beyond four calendar months; and therefore cannot be viewed in any other light, than as an equivalent for that unavoidable expence every ſhip will incur by being detained abroad longer than the ſtipulated time ſettled by mutual agreement between the two contracting parties.

The ſhips have been built from various dimenſions; but ſhips under the ſame contract have often been found to vary conſiderably in their real meaſurement; beſides, the principal dock-yards for the building of merchant-ſhips within the river of *Thames* differ from each other in the moulding, or framing of the ſhips, ſo much as to affect the ſtowage oftentimes, although the contract dimenſions are exactly the ſame; however, ſo great a degree of exactneſs as that comes to is not wanted on this occaſion; but in order to form a judgment of the quantity of goods which each ſhip can fairly ſtow, it is abſolutely neceſſary to know the real meaſurement, according to the builder's mode of eſtimating the tonnage.

It is requiſite to obſerve, that thoſe ſhips diſtinguiſhed under the denomination of ſmall ones, are ſuch as are contracted to be built from 657 to 716 tons; and thoſe, whoſe contracts have run from 758 to 864 tons, are ranked under the title of large ſhips.

I ſhall confine my analyzation, on the ſubject of the ſtowage and coſt, to ſhips of only two different dimenſions; the one taken from thoſe of the larger ſize, and the other from amongſt the ſhips that conſtitute the ſmaller ſize. From theſe a compariſon may eaſily be made, for all the different dimenſions contained in the two general ſizes, with ſufficient accuracy to anſwer the preſent purpoſe in every reſpect. The two ſizes I have fixed upon are, one of 864 tons, whoſe real meaſurement is 880 tons; and one of about 705 tons, whoſe real meaſurement is 720 tons. In order to diſcover what a ſhip of each of theſe ſizes will be able to ſtow, under different ſituations, it is very neceſſary, firſt of all, to make a few obſervations on the modes of calculating the tonnage of the various ſorts of goods brought from *India* and *China*, and thoſe that are carried thither.

Amongſt the variety of goods brought home, China-ware only is reckoned by the meaſurement of package. Teas, raw ſilk, pepper, cardemums, carmenia wool, cotton yarn, coffee, ſalt-petre, red-wood, lacks, cowries, ſagoe, and turmeric, are all reckoned by weight. The tonnages of bales of cotton, piece goods, wrought ſilks, and goods mixt with ſilk and cotton, are reckoned by ſo many pieces to a ton*, which varies according to the nature of the goods and the ſize of the pieces, from 1200 down to 160 pieces to a ton; and when any one ſpecies or denomination of goods conſiſts of ſeveral ſorts and ſizes, as to length and breadth, they are then reduced to two fixed ſtandards; one of 16 yards long and one yard wide, wherein 400 pieces go to a ton; and one of 10 yards long and a yard wide, wherein 800 pieces go to a ton. This rule has been eſtabliſhed in order the more accurately to aſcertain the tonnage. Intricate as the calculations of the tonnage may ſeem at the

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* A ton of 40 cubical feet contains 69,120 cubical inches.

A ton of 50 cub. f. contains 86,400 cub. i.

A ton of 70 cub. f. contains 120,960 cub. i.

A ton of 94 cub. f. contains 162,432 cub. i.

China-ware is reckoned after the rate of 50 cub. f. to a ton, or 86,400 cub. i.

Black teas are reckoned at 10 cwt. to a ton.

Green teas are reckoned at 8 cwt. to a ton.

Raw ſilk 10 cwt. to a ton, and is contained in 89 cub. f. from *China*, and about 76 cub. f. from *Bengal*.

Pepper is always ſtarted looſe, 16 cwt. of which is reckoned to a ton, and occupies a ſpace of 51 cub. f. or 836 cub. i.

Cardemums are reckoned at 12 cwt. to a ton; and coffee at 18 cwt. Carmenia wool, and cotton-yarn 10 cwt. to a ton; lacks of ſorts 16 cwt. to a ton; cowries 20 cwt. Sagoe 16 cwt; and turmeric 20 cwt.

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to a ton. Theſe two laſt articles are commonly ſtarted; but of late years, but little of them has been brought for the Company, and ſagoe, when brought, is uſually ſtowed amongſt the China-ware.

Salt-petre is reckoned at 20 cwt. to a ton. It is brought in bags, and beat after it comes into the ſhip, ſo that it ſtows in a very ſmall compaſs.

Red-wood is ſplit in pieces, and then ſtowed looſe in the ſhip for dunnage.

The dunnage is what is laid between the goods and the lining or inſide plank, in order to prevent the water that may drain down the ſides, or at any time riſe above the cieling, from injuring the cargoe, 20 cub. f. of it goes to a ton.

A cheſt of common Bohea contains 343 lb. of tea, and meaſures 22,032 cub. i.

One thouſand one hundred and twenty lb. goes to a ton, and the packages that contain that quantity meaſure the firſt ſight, I am clearly convinced, from a cloſe and careful inſpection, that the preſent modes of adjuſting the freights of the cargoes are fixed upon the ſoundeſt principles, and the ſecureſt foundation for the mutual benefit of both parties; and if any alteration ſhall be made in the mode of ſettling the tonnage, it will only tend to expoſe the Company and the Owners to frequent diſputes with each other. The Owners are now paid for the actual quantities they bring for the Company, which the outſide meaſurement of the packages can never aſcertain with equal accuracy. It

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ſure 74,926 cub. i. or 41 cub. f. 1076 inches to a ton.

A cheſt of Congo contains 85 lb. of Bohea tea, and meaſures 6,688 cub. i.—1120 lb. (or a ton) are contained in about 13 cheſts and one ſixth; equal to 88,058 cub. i. or 50 cub. f.—1658 i. to a ton.

A cheſt of Souchong contains 70 lb. of tea, and meaſures 6384 cub. i.—1120 lb. of tea (or a ton) are contained in 16 cheſts, equal to 102,144 cub. i. or 59 cub. f. 192 i. to a ton.

A cheſt of Hyſon, or green tea, contains 70 lb. and meaſures 6804 cub. i. — 896 lb. of this ſort of tea goes to a ton, and are contained in 12 cheſts and three fourths, equal in meaſurement to 86,751 cub. i. or 50 cub. f. 351 i. to a ton.

A cheſt of Singlo, or green tea, contains 78 lb. and meaſures 7038 cub. i.—896 lb. of this tea (or a ton) are

It alſo evidently appears, from theſe meaſurements of the ſeveral ſorts of goods, that they vary ſo much, in regard to the ſpace that a ton of each different ſort takes up, that without a knowledge of the real dimenſions of the goods, in their ſeveral packages, it will be impoſſible to arrive at any certain judgment, as to the number of tons a ſhip can be able to ſtow from the different ſettlements in *India*. Now the meaſurement of moſt of the different goods brought home has been hitherto unknown, becauſe the tonnage is not calulated from the dimenſions of the

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are contained in 11 cheſts and an half, equal to 80,937 cub. i. or 46 cub. f. 1449 i. to a ton.

A ton of piece goods, in *Surat* bales, weighs from 18 cwt. to 20 cwt. and is contained in five bales, or rather more; each bale on a medium, taken from the different ſizes, meaſures 27,600 cub. i. ſo that a ton of *Surat* piece goods contains 138,000 cub. i. or 79 cub. f. 1488 cub. i.

The number of pieces in the *Madras* goods, that go to a ton, weigh, with their packages, from 16 cwt. to 18 cwt. to a ton, and are contained in about five bales upon an average; which bales, on a medium, meaſure neareſt 24,500 cub. i. ſo that a ton of theſe piece-goods, according to the preſent mode by which the freight on thoſe goods is calculated, meaſures 122,500 cub. i. or 71 cub. f. 212 cub. i.

The bales from *Bengal* vary both in ſize and weight, and conſiſt of ſo many different ſorts as render any exact the packages, except in the China-ware: nevertheleſs, without ever examining into the cubical contents of the different packages, in order to diſcover the ſizes of each ton, it has been avowedly aſſerted what quantity ſhips can hold of bale-goods, although, from ſome of the ſettlements, they have never been completely loaded. This point has been determined, by taking the cubical contents of certain empty ſpaces found in the ſhips on their arrival, and then dividing by 40 to find the number of tons. Now 40 cubical feet only regulate the ton in the meaſurable goods carried out to *India*;

exact ſtandard impoſſible in their weight; they run from 12 cwt. to 18 cwt. to a ton; and the ton of each ſort of goods varies ſo much, one from the other, as makes it impracticable to judge of the cubical contents of a cargo of bales, but from meaſuring the ton of each ſort of goods ſeparately for each ſhip; becauſe it ſeldom happens that ever two cargoes are quite alike.

The bales brought in the *Duke of Grafton* meaſured 31,000,000 cub. i. and amounted in the freight-eſtimate, to 274 tons; which makes each ton, on the average, equal to 65½ cub. f. neareſt.

The *Rockingham* brought home 1239 bales, amounting to 234 tons in the freight-office; the bales contained 28,500,000 cub. i. equal to 71 cub. f. on the average to each ton neareſt.

Prince of Wales brought home 218 tons, contained in 983 bales, meaſuring 24,700,000 cub. i. equal, on the average, to 66 cub. f. to a ton.

Greenwich

India; therefore, as that number of feet becomes no ſort of guide to eſtimate the tonnage of the cargoes from *India*, the erroneous aſſertions, eſtabliſhed on this fallacious principle, muſt appear evident at firſt view: but this is not the only objection to be made againſt the opinions that have been ſo poſitively maintained from this method of reaſoning. In taking the contents of any particular ſpace, in order to diſcover the number of ſmall packages, of any given dimenſions, ſuch ſpace will contain, ſome conſideration muſt be had to thoſe vacancies which will always remain in the moſt compact ſtowage; and which, if the outward ſurfaces are tolerably ſmooth to the eye, are vulgarly ſaid to amount to no ſpace at all. The tea-cheſts are the ſmootheſt of any packages to be found in the different cargoes; but even theſe, it will evidently appear, leave more vacant ſpaces than thoſe, who never reaſon mathematically, will be induced to allow. In bales, this vacancy

Greenwich brought home 199 tons of bales, the number 1040, meaſuring 26,800,000 cub. i. equal, on the average, to 78 cub. f. to the ton.

Nottingham brought home 110 tons of bales, the number 514, meaſuring 11,700,000 cub. i. which is equal, on the average, to 61½ cub. f. to a ton neareſt.

will be much greater, becauſe their ſurfaces are rougher and more unequal than the tea-cheſts, and their edges and corners are round; and if any gentleman, who reaſons from thoſe miſtaken principles I have been pointing out, will go into the hold of a ſhip, ſtowed in the beſt manner poſſible, and obſerve the bales before they are broke out, I think he muſt become ſenſible of what I have aſſerted, if he has not before examined, with ſufficient accuracy, into the nature of this ſubject to diſcover it demonſtratively from reaſon.

The idea which has been thrown out, that the ſhips in general, as well the ſmall as the large ones, are each of them capable of ſtowing more goods from *China* (the only part from whence, of late years, they have been filled) than any one ſhip has brought home, does not ariſe ſo much from any difference of opinion, with regard to the quantity the hold will receive, as to what may be ſtowed upon the lower deck. Now that part of the lower deck which can, with propriety, be allotted for the ſtowage of ſuch goods as are liable to be damaged from wet or damp, ought not, in my opinion, to be extended farther forward than about the after-part of the main chains, which is nearly equal to the fore-part of the after-hatchway. Nevertheleſs, although the ſmall ſhips have not been able to go farther forward than this, with the bulk-head of the gun-room, and leave ſufficient room before it to ſtow the cables, water, proviſions, ſpirituous liquors, fire-wood, and ſtores of all kinds, ſtill the large ſhips have been able to carry the partition quite to the main hatch-way, that divides the after-part of the lower deck, for the ſtowage of goods, from the fore-part allotted for the ſtores of the ſhip, and not only leave ſufficient room for the water, proviſions, *&c.* but ſome ſpare room has alſo remained in the lazaretto for goods that wet or damp could not hurt.

The ſpace from the main-hatchway to the tranſom, in a ſhip of 864 tons contract, containing 880 * tons real meaſurement, when

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* Ships built under the contract of 864 tons have varied in their real meaſurement from 877 to 905 tons.

	C. I.
A ton of Hyſon tea meaſures — — —	86,751
A ton of the common Boheas — — —	71,924
Difference — — —— ——	14,827

The ſtowage of 343 lb. of the common Boheas contained in one cheſt of 2232 cub. i. when ſtowed againſt a proportional quantity of tea contained in the Hyſon cheſts, makes a ſaving in point of room, in every 100 cheſts of Bohea, of 5 tons, 8 feet, 576 cub. i. and in ſtowing when examined, was found to contain from ſide to ſide, in breadth and in depth,

ſtowing Singlo cheſts againſt Hyſon, both green teas, it appears that 14 tons of Singlo teas will ſtow within three feet in the ſame room that 13 tons of Hyſon tea occupy.

Stowed in the Gun-room.

	Tons.
164 cheſts of Souchong, equal — — — —	10 ¼
202 cheſts of Congo — — — — — —	15 ¼
346 cheſts of Hyſon — — — — — —	27
1000 cheſts of Singlo — — — — —	87
1712	
According to the Company's eſtimate amounted to	139 ½

	C. F.	C. I.
164 cheſts of Souchong contains —	605	1,536
202 cheſts of Congo — — —	781	1,408
346 cheſts of Hyſon — — —	1,362	648
1000 cheſts of Singlo — — —	4,072	1,548
The cubical feet amount to — —	6,822	1,720

Contained in the above 1712 cheſts.

	C. F.
The contents of the ſpace from the main hatch-way aft upon the lower deck —	10,300
The ſpace occupied by 1712 cheſts — —	6,823
The cubical feet contained in the different breakages, &c. — — —	3,477

	Tons.
The 10,300 cub. f. comes to — — —	257 ½
The actual tonnage of the teas ſtowed in the gun-room — — — — —	139 ½
The quantity of tons eſtimated to be ſtowed more than the gun-room could hold —	118

from the deck to the beam, as far aft as the mizzen-maſt, and from the mizzen-maſt to the tranſom, from the deck to the under edge of the tiller, 10,300 cubic feet, and was filled in the ſame ſhip with 1712 quarter cheſts of tea, in ſuch a manner as to leave no room to creep under the tiller; and it appears, that the cubic contents of the packages of the 1712 cheſts came to no more than 6823 feet; ſo that the ſpace occupied by the well, the ſtanions, the mizzen-maſt, the tranſom, the hanging knees, the dunnage for the ſides, and the flat of the deck, with thoſe breakages in ſtowage not to be prevented, do altogether contain 3477 cubic feet, which are equal to 86 tons, 37 feet, of 40 feet to a ton, the ſtandard by which all the ſeveral eſtimates on this ſubject have hitherto indiſcriminately been made; and this will readily account for all thoſe wild aſſertions that have ſo perplexed the minds of gentlemen, and led them into opinions that had no exiſtence, but in the viſionary conjectures of ſpeculative reaſoners, who never drew a ſingle concluſion from experience. The method that has been ſometimes practiſed, of ſtowing the goods ſo cloſe up to the tiller as is here deſcribed, that a man can neither creep under it, nor have ſufficient room to work the tackles in a gale of wind, or on the greateſt emergency, is a meaſure which I cannot, as a ſeaman, approve; although no accident has yet ariſen from it. Therefore, after taking off the neceſſary room for the purpoſe of working the tiller, and for a man to crawl aft to the ports without the danger of being jamb'd in his paſſage by the tiller, will take off about 72 cheſts of Singlo teas, and will reduce the above-deſcribed quantity of goods about 6½ tons; that is, from 139½ tons to 133 tons, which will then be all the gun-room of the large ſhip will be able to ſtow, according to my opinion of the room that ought to be left under the tiller. The teas are the goods the beſt calculated for ſtowage of any the Company bring home. So that if the ſame ſpace was to be occupied by bales picked out for the purpoſe, whereby they filled up in ſuch manner as to leave little or no breakage under the beams, there could not be ſtowed in the gun-room of the large ſhips more than 90 tons of *Madras* bales, or than 80 tons of *Surat* bales, or than from 70 to 90 tons of bales from *Bengal*.

Taking theſe ſeveral circumſtances for my guidance, I ſhall venture to affirm what a ſhip of each of the two ſizes, here fixed on, may bring home from *China*, fully laden, and the cargoes the moſt favourable that can in general be given. This, I ſuppoſe, to depend on the lading on board each ſhip, a certain number of large common Bohea cheſts, on the ſmall cheſts of tea, being chiefly Singlo's, and on no raw-ſilk being put on board. Thus much premiſed, if a regular and equal diſtribution is made of the large cheſts of common Bohea teas, and which, I believe, is uſually done as near as poſſible, about five tons in every hundred tons will be ſufficient to allow for that difference which will ariſe in the ſtowage of the ſame ſhip, if with the uſual number of large cheſts of Bohea teas, inſtead of the cargo conſiſting of Singlo teas, a conſiderable number of Hyſons and ſeveral bales of raw-ſilk ſhould be put on board.

Now I apprehend, that the ſhip of 880 tons will, with 1100 * cheſts of common Boheas, about 30 or 40 tons of China, and the reſt of the cargo chiefly Singlo's, ſtow 900 tons of net goods, without fill-ing up too cloſe under the tiller; and that the ſhip of 720 tons, real meaſurement, will bring home, with 1100 cheſts of common Boheas, about 25 or 30 tons of China, and the ſmall cheſts, all Singlo's, 680 tons for the Company. This ſmaller

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* The common Boheas are fixed at 1100 cheſts to each ſhip; becauſe the quantity that will be wanted, when the ſurplus ſtock now on hand comes to be cleared off, will, on an equal diſtribution, amount to that number for each ſhip.

	Tons.
Large ſhips to bring	900
Small ſhips	680
Stowed more in large ſhips than ſmall	220
Difference between the two ſhips in their real tonnage	160
What the great ſhip ſtows in goods more than the ſmall beyond the proportional difference	60
900 cheſts of Singlo's equal to 3665 cub. f. 80 cub. i. or 78 tons, at the rate of 896 lb. to a ton.	
Space contained in the gun-room comes to, in the ſhip of 720 tons, 5400 cub. f. which, at 40 is 135 tons; now 3665 cub. f. at 40 f. to a ton is	91½
So that the ſpace occupied by the breakages is, according to the general method of calculating 40 feet to a ton	43½
To be ſtowed betwixt decks in large ſhips, the tiller left clear	133
To be ſtowed in like manner in the ſmaller ſhips	78
Difference between the ſtowage of the two ſhips on the lower deck	55

Equal to what the great ſhip carries more than the ſmall ſhip, over and above the proportional difference between them, within five tons.

ſized ſhip contains in the ſpace upon the lower deck, from the fore-part of the after-hatchway, aft to the tranſom, 5400 cubic feet, and will contain in that ſpace 900 cheſts of Singlo teas, which are equal to 78 tons, according to the ſtipulated mode of reckoning the freight. Hence the ſpace taken up by the different breakages, occaſioned by the ſeveral circumſtances enumerated before, amount to 1735 cubic feet; this added to that room, which every ton of tea takes up more than 40 cubic feet, will account for 57 tons, which each ſhip of the ſmall ſize has been eſtimated to be able to bring between decks, beyond the tonnage that can really be ſtowed there.

The three thouſand ſix hundred and ſixty-five cubic feet contained in the 900 cheſts of Singlo teas, which number of cheſts amount to 78 tons according to the freight-calculations, would, in *Surat* bales, ſtow no more than 46 tons, in the *Madras* bales 50 tons, and in *Bengal* bales from 47 to 60 tons, if the bales were picked; but fine *Bengal* bales would be very improper ſurely for the gun-room.

Theſe quantities I judge to be the utmoſt that can, at any rate, be ſtowed upon the lower decks of the ſhips of the two different dimenſions; and hence it appears, that the ſhip of the largeſt ſize, meaſuring 880 tons, will ſtow 20 tons more than her tonnage, with the moſt advantageous China cargo, whilſt the ſhip of 720 tons meaſurement will not ſtow that tonnage, in net goods, by 40 tons; ſo that 60 tons will be gained in the ſtowage of the large ſhip againſt the ſmall, being the tonnage which the large ſhip is able to take in more than the proportional difference between them in ſize: and it likewiſe does appear, that the hold of the large ſhip will ſtow ſcarce any more goods, in proportion, than the hold of the ſmall ſhip; the advantage in point of room, in large ſhips over ſmall ones, laying moſtly in the additional room for goods betwixt decks.

The ſhip of the largeſt ſize going to *Bencoolen* would, without doubt, be able to ſtow more than the builder's tonnage in pepper, even to ſome conſiderable amount, admitting the gun-room to be filled with bags of pepper; but that, I apprehend, would be very improper on ſeveral accounts. The ſpace contained between the main hatchway and the tranſom, if filled with bags or caſes of pepper, in like manner as it has been filled with cheſts of tea, would weigh above 110 tons of 20 cwt. to the ton; whilſt 140 freight tons of Singlo teas weigh no more than 56 tons real weight; and if the gun-room was to be filled with Hyſons, inſtead of Singlo teas, the weight would be no more than 52 tons real weight.

Such a quantity of pepper upon the lower deck, added to the ſtores, proviſions, and water, would make the weight aloft too much. Beſides, a cargo of pepper, being of equal weight throughout, and as whatever lays above ſeven or eight feet from the kelſon contributes little or nothing to ſtiffen the ſhip, a large quantity of ballaſt muſt be abſolutely neceſſary to enable the ſhip to bear pepper between decks. On the other hand, to leſſen the quantity of pepper in the hold, to make room for a ſufficient quantity of ballaſt to enable the ſhip to bear pepper betwixt decks, would be both uſeleſs and abſurd. If this reaſoning be true, a ſhip from *Bencoolen* will not ſtow, with ſafety, more, if ſo much, as from *China*; provided the cargo from thence conſiſts only of common Boheas, and Singlo teas.

When it is conſidered, that the ſhips contracted at the ſame dimenſions are found to vary, in their real meaſurement, from 20 to 60 tons, which real meaſurement muſt be the ſtandard to judge from, or all opinions on the ſubject will be vague and uncertain to the laſt degree; and that a ſhip upon her quarter-deck ſhall, within five or ſix feet of the mizzen-maſt, be ſo many feet wider than another ſhip, which is not more than three feet narrower upon the beam; we may be able to account, in ſome meaſure, for that difference which appears in the ſtowage of ſhips ſaid to be nearly of the ſame burthen, and whoſe cargoes conſiſt of the ſame ſorts of goods.

When it is alſo known, that large Bohea cheſts do, in ſtowage, gain 5 tons, or 13 feet, 816 cubic inches, when ſtowed againſt the ſame tonnage in Hyſon teas; and that 13 tons of Hyſon teas take up as much room, within three cubic feet, as 14 tons of Singlo teas; and that a ton of raw-ſilk takes up almoſt as much room again as a ton of Singlo tea; it muſt then become evident, that the ſame ſhip may vary from 20 to 40 tons or upwards, in the apparent quantity of goods, according to the freight-tonnage, brought home on different voyages, and yet be equally full in point of ſtowage.

I ſhall not enter into a diſcuſſion of what a large ſhip would ſtow from *Bengal* and the two coaſts, becauſe they are by every body allowed to be improper for that part of the trade; but more particularly for the river of *Bengal*, where the ſhips to *Bombay* and *Madras* are oftentimes liable to be ſent; for, in that river, the large ſhips would ruin their owners in ground-tackling, was no other dangerous conſequence likely to happen. Whether the ſhips of 720 or 670 tons will ſtow to the full amount of the builder's tonnage from *Madras* and *Bengal*, including kintlege, with two thirds of their cargoes bale-goods, is not yet, in my opinion, quite aſcertained. I muſt own I have ſome doubts upon that head; however, from *Bombay*, they will certainly ſtow the builder's tonnage, including kintlege, provided they have a ſufficient quantity of ſalt-petre laden on board; ſo much, as to make little or no ballaſt neceſſary; and at the ſame time have not more *Surat* bales in the cargo, than are uſually put on board.

Many gentlemen are poſſeſſed with the belief, that the ſhips will bring the builder's tonnage, excluſive of kintlege, from all the three preſidencies. This I do, at no rate, allow will be the caſe from any one of them; and I found my opinions on the practical experience of the paſt, as well as

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the preſent times. The ſhips from *Bengal*, formerly, came nearer the builder's tonnage, in the quantity laden on board, than from either of the two coaſts; but even the *Naſſau*, a ſhip that came loaded from thence in the year 1733, had not the builder's tonnage, in ſalt-petre, bale, and cheſt goods, by 20 tons; therefore, unleſs thoſe goods ſhot looſe in the wings, in places where bale-packages could not be put, are reckoned into the account of the tonnage, that ſhip did not fairly bring the builder's meaſurement, conformable to the opinion ſo ſtrongly urged, that ſhips, with ſalt-petre ſufficient on board to make ſtone ballaſt unneceſſary, the uſual quantity of red-wood, and the remainder of the cargo bale-goods, would ſtow, in freight tons, to the amount of the number of tons contained in the builder's meaſurement of each ſhip.

The *Naſſau* is the only ſhip, out of a conſiderable number of thoſe that returned from *India* between the years 1715 and 1740, whoſe cargoes have been ſearched into, that has been found to have brought home goods for the Company to nearly the amount of the builder's tonnage.

It muſt be a well-known fact to every gentleman converſant in the different ſorts of goods manufactured in the *Eaſt Indies*, that they have long been upon the decline, and that, 40 or 50 years ago, every different aſſortment of piece-goods was much finer, and wove with more care, than they are at preſent. This circumſtance alone will, doubtleſs, make a very material difference, in reſpect of the room occupied by 12 or 14,00 bales at this time, and an equal number of the ſame denominations ſo many years back.

A conſiderable difference is alſo to be found between the preſent and the former ſyſtem of building the freight ſhips. I would ſpeak with diffidence on any new attempt; however, in my own private judgment, I diſapproved it; becauſe every alteration done, with a view to public utility, ought to have a fair trial, and, even if it fails, ſhould be treated with candor and indulgence. For, otherwiſe, no improvements can ever take place; beſides, in all mechanical experiments, ſome uſeful diſcoveries will riſe up worth adopting.

I do venture to aſſert, as the private opinion of an individual, who has had ſome practical experience, that ſhips extended in breadth, without a proportional extenſion in length, and in the depth of the hold, will not ſtow to that advantage which might be expected from the nominal tonnage they receive from the increaſed breadth alone. I found this opinion upon principles obvious to all who will conſider the conſtruction of a ſhip; beſides the *Swediſh* ſhips will evidently ſhew it, from a review of their cargoes, compared with the cargoes of *Engliſh* ſhips; the *Swediſh Eaſt India* ſhips have, to the ſame breadth with our *Engliſh* ſhips, 14 or 15 feet more length on the keel, and conſiderably more depth in the hold.

However the experience of the preſent times will plainly contradict the aſſertion, that the ſhips can bring the builder's tonnage in ſalt-petre, red-wood, and bales, from *Bengal* and *Madras*, without including the kintlege in the tonnage.

A ſhip of 629 tons *, builder's meaſurement, came home, loaded full, from

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		Tons.	
* Builder's tonnage		629	
Salt-petre	192		
1312 bales	263		
		455 Tons.	
			174
Red-wood, ſplit and ſtowed looſe, deduct	28		
Kintlege	80		108
Short of builder's tonnage			66

Madras; there was no kintlege in the ſhip, but it was ſupplied by old guns, ſhot, and ſhells, to the amount of about 60 tons; and, having a large quantity of ſalt-petre, no ſtone-ballaſt remained in the ſhip. The cargo amounted to 455 tons of goods, in packages, conſiſting of ſalt-petre and bales, and 28 tons of red-wood, ſplit and ſhot looſe; the goods, according to the freight tonnage, that were ſtowed in the packages, were 174 ſhip-tons ſhort of the builder's meaſurement; and 66 tons ſhort after deducting the kintlege and red-wood.

A ſhip of 722 tons *, real meaſurement, came home, full laden, from *Madras*, and brought of ſalt-petre and bales 551 tons, freight-tonnage, which was ſhort of the the real tonnage of the ſhip 171 tons; and after deducting the kintlege, and red-wood

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		Tons.	
* Builder's tonnage — —		722	
Salt-petre — — —	140		
2100 bales — — —	411		
		551	
			Tons.
			171
Red-wood, ſplit and ſhot looſe —	28		
Kintlege — — —	80		
			108
Short of builder's tonnage — —			63

ſhot looſe, the whole was ſhort of the builder's tonnage 63 tons.

This was as complete a cargo as can, in general, be met with; the ſhip was ſo full, that unleſs all the paſſengers, packages, and private trade, had been put on ſhore, there would not have been room for the above 63 tons at any rate. The bales from *Bengal* are very irregular, more ſo than from *Madras*, and conſequently more inconvenient for ſtowage. If the ſhips ſhall at any time ſtow the builder's tonnage, including kintlege, from *Madras* and *Bengal*, in ſalt-petre, and bale or cheſt-goods, it muſt depend on a large quantity of ſalt-petre being laden on board, to the amount of 200 tons; as a ton of ſalt-petre ſtows in much leſs room than a ton of bale-goods.

A ſhip of 700 tons dimenſions ſhould have 260 or 270 tons of dead weight in her bottom; and if this weight is not ſupplied by a ſufficient quantity of ſalt-petre, added to the kintlege, it muſt be made up with ſtone-ballaſt, which, at *Bombay*, is extremely bulky; therefore, although a ſhip from *Bombay* will, without doubt, ſtow her builder's tonnage, including kintlege, exempted from much ſtone-ballaſt, and perhaps from *Madras* and *Bengal* alſo, with 200 tons of ſalt-petre, yet if it ſhall at any time happen, that *Bombay* cannot furniſh the neceſſary quantity of ſalt-petre, which muſt entirely depend on *Bengal* for a ſufficient ſupply of that article; or ſhould a ſhip take in a larger quantity of *Surat* bales than uſual; in either of theſe caſes, the ſhip will be under ſome difficulty, I apprehend, to take in the builder's tonnage, including kintlege, even from *Bombay*; admitting therefore, under particular advantages, that ſhips may be able to take the builder's tonnage, including kintlege, from all thoſe three places, ſtill it would be very improper to charter them at a tonnage, which, under any one ſituation which may poſſibly ariſe, the ſhips ſhall be unable to perform. Hence, it ſurely muſt be obvious, that the ſhips ſhould not be let to hire for that tonnage, which only can be brought under particular circumſtances. I am ſatisfied the Company thought ſo in former times; and that they were governed by ſome ſuch rules in their method of hireing ſhips at freight for the different voyages; and which will clearly appear from an inſpection into the chartered tonnage of the ſhips 50 or 60 years back.

It is very neceſſary, there is no doubt, for the intereſt of the Company, to extend the chartered tonnage as far, as the certainty of what the ſhip can ſtow, under different circumſtances, will admit; becauſe the tonnage, which one ſide engages to bring, and which the other is equally obliged to pay for, muſt always be conſidered by the Owners in their agreement with the Company, as the only ſum they can be ſure to receive; ſo that they will naturally take care, that the ſum ſtipulated to be paid them ſhall nearly be equal to the riſk and expence of the voyage, if it ſhall be performed within 16 or 17 months; the bargain otherwiſe cannot be made for the mutual benefit of both parties; for theſe reaſons, the freight of the goods to be brought, beyond the chartered tonnage, ſhould be ſettled at as low a price as will only be juſt ſufficient to induce the Owners to receive them. On any other terms, one of the parties will become ſufferers in the end; therefore, in my opinion, the ſhip of 720 tons, real meaſurement, if ſent to *Bengal*, or either of the two coaſts, ſhould not be chartered for more than 665 tons, including kintlege; but more to be laden, if the ſhip can conveniently ſtow it, conformable to all former charter-parties; and for ſuch further tonnage, not more to be paid than half the chartered price; and ſhips of leſs burthen to be chartered in the ſame proportion.

It may ſometimes happen, from the bale-goods on board falling out particularly fine, that a ſhip may bring her real meaſurement, including kintlege, or rather more; but then it will much oftener happen, provided the uſual aſſortments of coarſe, as well as fine bale-goods, are laden on board, and that the cargoes conſiſt of 200 tons of ſalt-petre, and the reſt moſtly bale-goods, that the ſhip will be full, and the builder's tonnage, the kintlege included, not laden by 30 or 40 tons, although the commander and officers have no more on board than 50 tons. But if 30 or 40 tons of ſalt-petre ſhall be laden, beyond the 200 tons, and 20 or 30 tons of cowries and other articles, that will ſtow in holes and corners, where bale-goods cannot go, at the ſame time that their meaſurement, as to the proportional ſpace they occupy, is much leſs than the bale-goods take up, there is no doubt but a ſhip may have on board the number of freight-tons, including kintlege, equal to the builder's tonnage, and not be full; beſides ſome allowance of room ſhould be made in ſhips coming home from either of the three preſidencies, for paſſengers; for if they are permitted to come home, they muſt have room for their apparel and neceſſaries, and an additional quantity of water muſt be requiſite, eſpecially when women and children are on board. This, it may be ſaid, the Company have nothing to do with. That is true, in a certain degree; however, it would be very hard to deny gentlemen and ladies, and their families, a convenient paſſage; and highly imprudent and injudicious to drive them to ſeek a paſſage to *Europe* in foreign ſhips.

I ſhall now proceed to ſhew, what a ſhip ſhould receive for a voyage of 16 months, or thereabouts, to give the Owners a reaſonable return for the riſk and expence.

In order to diſcover this equivalent, I ſhall firſt ſtate the original coſt of a ſhip of each of the two ſizes, and then add to that coſt the charge of inſurance for the voyage, together with 7 l. *per cent. per annum* on that ſum the Owners are in advance from the commencement to the end of the voyage: this will truly ſhew the ſum that the Owners ought to receive from the Company, for a voyage made within the before-mentioned time of 16 or 17 months. The 7 l. *per cent. per annum* is to be conſidered, not only as mere intereſt for the principal, but as a return alſo for thoſe accidents that may ariſe to the ſhip, and for that damage the cargo may receive; both of which, it lays with the Owners to reimburſe:

imburſe: in which caſe no gentleman, converſant in buſineſs of that kind, can ſay the premium I have fixed is too large.

I ſhall eſtimate a ſhip of the largeſt ſize, that is, one of 864 * ton's contract, whoſe real meaſurement is 880 tons, to go to ſea victualed only for her crew (no paſſengers proviſions included) and mann'd with 125 men, and proviſions for them laid in for 56 weeks, for the ſum of 22,300 l. The expence of providing the neceſſary proviſions for the diet of the ſoldiers, and other paſſengers going to *India*, is not included in the above ſum; becauſe it does not come ſo properly into the preſent inquiry, and is, in fact, laid in by the Company, as they pay the Owners immediately on the ſhip's departure from *England* a certain ſum for each perſon embarked on their account.

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* This eſtimate ſuppoſes the ſhip of 864 tons, contract meaſurement, to be built for 12 l. *per* ton, and to be increaſed 26 tons in the raiſing the frame, and to be victualed for 125 ſeamen. The reaſon of fixing the complement of men for the ſhip of this ſize, beyond the uſual number, ariſes from a conviction, that, if ſhips of this dimenſion continue to be built, the crew muſt be conſiderably increaſed above the ſtipulated complement of 100 men; and which is now done by moſt of the large ſhips, although not regularly authorized by the Court of Directors.

A ſixteenth

The groſs outfit of a ſhip of the largeſt ſize, eſtimated at — — — —		£.22,300
Deduct impreſs at 50 s. *per* ton on the chartered tonnage, ſuppoſing it at 880 tons, the real meaſurement — —	£.2,200	
To which firſt add what may be expected for out-freight, and gain on paſſengers — —	620 —	2,820
Theſe two ſums ſubſtracted from the groſs outfit, leaves — —		19,480

The amount of the coſt to the Owners being ſo much as they actually advance upon their own riſk, and is equal to £.1,217 10 s. upon each 16th ſhare.

Now

A ſixteenth ſhare — — —	1,220			
Intereſt at 7 l. *per cent. per annum*, for 2½ years —	213 10—	1,433	10	0
Inſurance on 1,433 at 7 gs. with 1½ year's intereſt on the premium — — — — —		116	10	0
		1,550	0	0
Deduct a divid. at the end of the 1ſt voy.		490	0	0
Coſt of the ſhare at the outſet of the ſecond voyage — —		1,060	0	0

The

Now admitting the four voyages ſhall be performed in ten years, the ſhorteſt time

The 16th ſhare coſt at 2d voy.	1,060			
Int. at 7l. *per cent. per an.* 2½ years — —	185 10	—1,245	10	0
Inſurance on 1,245 l. at 7 gs. with 1½ year's intereſt on the premium — —		101	0	0
		1,346	10	0
Deduct a divid. at the end of the 2d voy.		380	0	0
Coſt of the ſhare at the outſet of 3d voy.		966	10	0
The 16th ſhare coſt at 3d outſet	966 10			
Intereſt at 7 l. *per cent. per an.* 2½ years — — — — —	167 10	—1,134	0	0
Inſurance on 1,134 l. as above — —		92	6	0
		1,226	6	0
Deduct a divid. at the end of the 3d voy.		496	0	0
Coſt of the ſhare at the outſet of the 4th voyage — —		736	6	0
Coſt of the ſhare at the 4th outſet	736 6			
Int. at 7l. *per c. per an.* 2½ years	128 16	—865	2	0
Inſurance on 865, with Intereſt on the inſurance from the time of payment 1½ year — —		70	14	0
Coſt of the 16th part of the ſhip —		935	16	0
Remaining unpaid at the end of the 4th or laſt voyage, ſhewing the ſum the ſhip muſt break up at, to gain the fair equivalent for the riſk and expence of the concern, and which amounts to		14,972	16	0

The

time that can in reaſon be allotted for the purpoſe; that 16th ſhare, which coſt the Owner of it £. 1,217 10 s. will require, in order to pay the inſurance on the riſk, and to give 7 l. *per cent. per annum* upon the

The freight to be earned by a ſhip of 864 tons contract, and 880 tons real meaſurement, for a voyage made within 17 months, is eſtimated to amount to — — —		£.20,500
Deduct the advance outward bound for impreſs — —	£.2,200	
Alſo the amount of wages and the abſence, the expences in *India* and in *England* to laying up — —	5,225	— 7,425
— — —		13,075
From hence deduct the dividend at the end of the firſt voyage, ſet at £.490 each 16th ſhare — — — — —		7,840
Remaining towards the outfit of the 2d voy.		5,235
To which add the impreſs and other receipts, the ſame as the firſt voyage —		2,820
Eſtimated outfit of the 2d voyage, excluſive of ſoldiers proviſions — —		8,055
Amount of the freight at the end of 2d voy.		20,500
Deductions the ſame as at the end of 1ſt voy.		7,425
		13,075
Subſtract the dividend at the end of 2d voy. ſet at 380 l. each 16th ſhare — —		6,080
Remaining towards the outfit of the repairing voyage — — —		6,995
Add impreſs and gains outward, as before		2,830
Eſtimated amount of fitting voyage, excluſive of ſoldiers proviſions — — —		£.9,825

Amount

the ſum remaining in advance during each voyage, out of the original coſt, a divi-

Amount of the freight at the end of the 3d voyage	£.20,500
Deductions the ſame as at the end of the 2d voyage	7,425
	13,075
Subſtract the dividend at the end of the 3d voyage, the ſame as at the end of the 1ſt, £ 490 each 16th ſhare	7,840
Remaining towards the outfit on the 4th voy.	£.5,235
Add impreſs and other receipts as former voyages	2,820
Eſtimated outfit on the 4th or laſt voyage, ſuppoſed to be the ſame expence as the outfit on the ſecond voyage	£.8,055
Amount of the freight at the end of the 4th or laſt voyage	£.20,500
Deductions for the impreſs advanced outward-bound, and for the wages and expences in *India* and in *England*, from the ſhip's return to her being ſold	7,425
Remaining at the end of the concern out of the freight	£.13,075
To which add what may be expected for the ſale of the ſhip, and the guns and ſtores	2,125
The ſum that will remain to be divided amongſt the Owners at the end of the concern, equal to £.950 on each 16th ſhare	£. 15,200

dend, at the end of the firſt voyage, of £.490; one of 380, at the end of the ſecond; then another of 490, at the end of the third voyage; and at the end of the fourth or laſt voyage, at the final balance of the concern, the ſhip ſhould divide £.940 upon each 16th ſhare.

Theſe calculations are made on the ſuppoſition of no extraordinary accident ariſing to the ſhip, or of damage to the cargo, during each voyage; ſo that if either of theſe circumſtances happen, the deductions, to make good ſuch demand, muſt be taken from the dividend herein propoſed.

I ſhall in the next place proceed to ſtate the ſum neceſſary to be paid by the Company upon each voyage, in order to provide a ſufficient ſum for the propoſed dividend at the end of the reſpective voyages, after paying the various expences incurred by the ſhip, as well in *India* as in *England*; reckoning the diſburſements on each voyage, from the ſhip's entering into the dry dock to be repaired, to the laying her up in the wet dock at the end of the voyage. The ſhip of the largeſt ſize, upon a voyage of 17 months, wherein no demurrage does accrue, muſt receive, for the amount of her freight, the ſum of £.20,500; out of this £.7,840 will be to be divided amongſt the Owners, £.7,425 will go towards the diſcharging the expences of the voyage, and the remainder will be expended in the outfit for the ſecond voyage, though no extraordinary demand of any kind ſhall have occurred. At the end of the ſecond voyage I do ſuppoſe the ſame freight to be received, as at the end of the firſt, from which ſum only £.6,080 is to be divided amongſt the Owners; becauſe the additional expence in the outfit, from the ſhip's undergoing a more thorough repair upon the third voyage, than on any other, is always paid out of the ſum earned upon the ſecond voyage. It is on this repairing voyage, that the hull of the ſhip is more particularly examined, than any other; for the bottom is new-ſheathed, and great part of the rigging and ſtores are renewed. The expence is generally about £. 2000 more than the amount of the outfits on the ſecond and fourth voyages, though the timber and planks are moſt of them found to be in good condition; and this is the reaſon that no more than £. 380 is propoſed to be divided on each 16th ſhare, at the end of the ſecond voyage.

The third voyage is eſtimated to divide £.7,840 amongſt the Owners; which is to the ſame amount as the ſum divided out of the freight at the end of the firſt voyage; the outfits of the ſecond and fourth voyages being generally the ſame, if no unforeſeen accidents ariſe.

The fourth, or laſt voyage, ſuppoſes the ſhip, at the end of it, to be ſold; therefore, as no money is reſerved for fitting the ſhip out again, all that remains from the expences of the voyage, with what ariſes from the ſale of the ſhip, and the ſtores, will be left to divide amongſt the Owners; and will, according to this eſtimate, produce about £.950 to each 16th ſhare, on the ſhip of the largeſt dimenſions.

I ſhall next examine what a ſhip of about 705 tons contract*, and 720 tons real

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* The 16th ſhare of a ſhip of 720 tons, real meaſurement, coſts — — —	£.965	0	0
Int. at 7 l. *per cent. per an.* for 2½ years	168	17	0
	£. 1,133	17	0
Inſurance on 1,133 l. at 7 gs. *per cent.* with intereſt on the inſurance to the time of payment 1½ year — —	92	0	0
	£. 1,225	17	0
Deduct a dividend at the end of the 1ſt voyage at the rate, on a 16th, of —	380	0	0
Coſt of the ſhare at the cloſe of the 1ſt voy.	£. 845	17	0

real meaſurement, ſhould receive for a voyage of 17 months, as a fair equivalent

The 16th ſhare at the 2d outſet	£.845	17	0			
Intereſt at 7 l. *per cent.* 2½ years	148	0	0	993	17	0
Inſurance on £. 993, as above — —				81	13	0
				£. 1,075	10	0
Deduct a dividend at the end of the 2d voyage at the rate, on each 16th, of —				275	0	0
Coſt of the ſhare at the cloſe of the 2d voy.				£.800	10	0
The 16th ſhare of the 3d outſet	£.800	10	0			
Intereſt at 7l. *per cent.* 2½ years	140	0	0	940	10	0
Inſurance on £. 940, as above — — —				76	10	0
				1,017	0	0
Deduct a dividend at the end of the 3d voyage at the rate, on each 16th, of —				380	0	0
Coſt of the ſhare at the cloſe of the 3d voy.				637	0	0
The 16th ſhare at the 4th outſet	637	0	0			
Intereſt at 7l. *per cent.* 2½ years	111	10	0	748	10	0
Inſurance on £. 748, as before — —				59	10	0
Coſt, with intereſt, remaining — —				808	0	0
Unpaid at the end of the 4th or laſt voyage, on a 16th ſhare, ſhewing the ſum the ſhip muſt break up at to give the Owners a reaſonable return, and which amounts to — — — —				12,928	0	0

for that riſk and expence which the ſhip muſt neceſſarily incur. No allowance, it ſhould be remembered, is made in either of theſe eſtimates for the proviſions uſually laid in by the Owners (which are always included in the groſs outfits) whenever ſoldiers are ordered on board for the ſettlements in *India*. My reaſon for not including the diet of the paſſengers in theſe eſtimates, is, that the expence, not being an article actually belonging to the fitting of the ſhip out, but being a contingency that may or may not ariſe in the account, and when it does, being paid by the Company as ſoon as the ſhip leaves *England*, it cannot therefore come properly into this calculation. So that, in theſe eſtimates, I only carry to the credit of the Owners outward-bound, as much as may reaſonably be expected to be gained by the out-freights, and by paſſengers, after the expence of laying on board the neceſſary proviſions for them is deducted from what the Company pays on that account; and likewiſe in caſe they ſhall be landed within ſix months from the ſhip's departure from the river of *Thames*.

The ſhip of 705 tons contract, and of 720 tons real meaſurement, being fitted for the voyage, mann'd with 100 ſeamen and

officers, and victualed for that number, with the uſual proviſions for 56 weeks, will coſt clear to ſea — — £. 17,600
From thence deduct the impreſs
advanced outward-bound at 50s.
per ton, on 680 tons £. 1,700
Alſo the out-freight and
gain by paſſengers eſ-
timated at — — — 460—2,160

The net amount advanced by the
Owners — — — — — —£. 15,440

Equal to £. 956 each 16th ſhare.

If the four voyages, the ſhip of this burthen * is intended to make, are performed in the ſpace of ten years; in that caſe it will require a dividend of £.380 at the end of the firſt voyage; one of £.275 at the end of the ſecond voyage; and another of £. 380 at the end of the third voyage, on each 16th ſhare; and then at the end of the 4th or laſt voyage, at the final balance of the ſhip's accounts, the dividend, on the above ſhare, ought to amount to £. 808, in order to afford 7 l. *per centum per annum*, and to cover the inſurance on what the Owner ſhall from time to time be in advance.

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* The ſhip of 720 tons is here propoſed to be let to *China* or *Bencoolen* for builders tonnage; but to *Bengal*, &c.

The

&c. only for 665 tons; in my calculation, therefore, I have ſet the impreſs at a medium between the two.

The freight that ſhould be earned by a ſhip of 720 tons, real meaſurement, for a voyage made within 17 months from *China*, and from all parts of *India* (*Bengal* only excepted) is here eſtimated at —		£. 16,900
From thence deduct the advance outward-bound for impreſs —— ——	£. 1,700	
Alſo the amount of wages and the abſence, the expences in *India*, and on the ſhip's return to the laying her up —— —	4,400 —	6,100
		£. 10,800
Deduct the dividend at the end of the 1ſt voyage £. 380, on each 16th ſhare ——		6,080
		4,720
To which add the impreſs and other gains the ſame as the firſt voyage —— ——		2,160
Amount of the outfit of the 2d voyage, excluſive of the ſoldiers proviſions — —		£. 6,880
Amount of the freight at the end of the 2d voy.		£. 16,900
Deductions for impreſs advanced, outward-bound, for wages and expences, as on the former voyage —— —— —— ——		6,100
		10,800
Deduct the dividend at the end of the 2d voyage, ſet at £. 275 each 16th ſhare ——		4,400
Remaining towards the outfit of the 3d voy.		6,400
To which add the impreſs and other eſtimated gains, the ſame as before — —		2,160
The eſtimated amount of the repairing voyage, excluſive of the expence of the proviſions for ſoldiers —— —— —— —		£. 8,560

Amount

The ſmall dividend at the end of the ſecond voyage is in conſequence of the expence of the repairing voyage being paid out of the profits of the ſecond voyage.

Amount of the freight at the end of the 3d voy.	£.16,900
Deductions for impreſs, advanced outward, wages, and other expences, the ſame as the former voyages — — — — —	6,100
	10,800
Deduct the dividend at the end of the 3d voyage at £. 380 for each 16th ſhare, the ſame as at the end of the 1ſt voyage —	6,080
Remaining towards the outfit of the 4th voyage — — —	4,720
To which add the impreſs and other eſtimated gains, as for the other voyage —	2,160
Eſtimated amount of the 4th or laſt outfit, excluſive of the expence of ſoldiers proviſions. — — —	6,880

Amount of the freight at the end of the 4th or laſt voyage — —	£. 16,900
Deductions for impreſs advanced outward-bound, wages, abſence, expences on the voyage, and from the return to the end of the concern — — —	6,000
	£. 10,900
To this add the amount from the ſale of the ſhip and ſtores, eſtimated at — —	2,000
Amount of what will remain to be divided at the end of the laſt voyage, equal to £. 806 5s. upon each 16th ſhare — —	12,900

The eſtimate for this ſhip is made on the ſame principle with the former, and ſuppoſes no damage to the cargo, and no extraordinary accidents to the ſhip; under either of which circumſtances, the expence muſt be paid out of the ſums allotted for the dividends.

In order to provide the ſeveral dividends herein propoſed, the ſhip muſt receive for each voyage performed within 16 or 17 months, and whereon no demurrage is ſuppoſed to accrue, the ſum of £. 16,900; which will be no more than ſufficient to fit the ſhip for ſea on the ſecond voyage, and to afford a dividend of £. 380 on each ſhare.

The additional expence for the outfit of the third, or repairing voyage, is, in this eſtimate, ſet at £. 1,680, and is as low as that expence can, on the average, be reduced; admitting the timbers and planks in general prove ſound, the third voyage is calculated to give the Owners the ſame dividend as is eſtimated for the firſt voyage.

And the laſt or fourth voyage will, from this calculation, divide £. 806 5 s. on each ſixteenth ſhare at the final balance of the concern.

Theſe eſtimates I apprehend to be as near as the nature of a concern, ſubject to ſuch a variety of incidents, will admit, or as the deſign of the inveſtigation requires.

The ſhips of the ſmaller dimenſions going to *Bengal* (for the very large ones are reckoned unfit for that river) ſhould receive more by £. 800 for her freight, in a voyage to be performed within 17 months, than is allotted for *China*, or for the other parts of *India*; which will bring the eſtimated amount of the freight alone, excluſive of any demurrage, to £.17,700 upon that particular voyage.

I know allowances muſt be made for the difference that at times has been found to ariſe in the expence of ſhips of nearly the ſame dimenſions; therefore, I have endeavoured to reduce theſe calculations, as near as lays in my power, to an average that will allow for thoſe circumſtances.

I do not deſire any gentleman to pin his faith on my aſſertions; all my wiſh or aim is ſo to inveſtigate this matter, as to furniſh thoſe who chuſe to be informed on the ſubject with the means of examining into the truth of what I have ventured to affirm.

As it is propoſed to ſend the great ſhips only to *China*, and to *Bencoolen*, it is unneceſſary to draw the compariſon between them, and the ſmaller ſhips from any other parts of *Aſia*.

If my eſtimates are right, and they have, I believe, experience on their ſide, three great ſhips, whoſe actual meaſurement is 880 tons, will be able to bring from *China*, on the Company's account, 2,700 tons of net goods, under the moſt favourable circumſtances; and four ſhips *, each of 720 tons, actual meaſurement, will, with ſimilar cargoes, bring home 2,720 tons of net goods, or 680 tons in a ſingle ſhip.

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* Four ſhips will bring 2,720 tons of goods for —— ——		£. 67,600	0	0
Equal *per* ton to ——	£.24 17 0½			
Deduct the coſt of 20 tons at the above price —— ——		497	0	10
Expence of bringing home 2,700 tons of goods on the four ſmall ſhips		67,102	19	2
Expence of bringing home 2,700 tons of goods on three large ſhips ——		61,500	0	0
Difference of the expence of bringing home 2,700 tons —— ——		£.5,602	19	2
In favour of the large ſhips, equal *per* ton to —— ——		£. 2	1	2¼

The great ſhips ſhould, each of them, earn for the freight of their cargoes £.20,500, and ſmaller ſhips each £.16,900, in return for a voyage of 16 or 17 months. So that the great ſhips, according to this calculation, will bring the Company's goods home for 41 s. 2¼ d. *per* ton cheaper than what the ſmall ſhips can afford, from the preſent coſts of their hulls, and the expence of the outfits, and diſburſements on the ſeveral voyages.

I have endeavoured to ſhew what ſhips of two different ſizes can ſtow, with cargoes the moſt advantageous for that purpoſe. I have alſo ſtated the ſums which large and ſmall ſhips ſhould each of them earn for a voyage made within the ſhorteſt times that the diſtance, and the neceſſary ſtay in *India*, will admit.

However, it will ſeldom happen, that more than two or three ſhips will come home in one ſeaſon, without incurring demurrage; becauſe the nature of the ſeaſons, and the times of collecting the different ſorts of goods from thoſe places where they are produced, will occaſion a detention beyond the four months to moſt of the ſhips.

This demurrage muſt be conſidered as an equivalent for ſuch additional detention, and therefore muſt be added to the ſum ſtipulated for each ſhip to earn in 16 or 17 months. And although two or three ſhips may return with little or no demurrage due, the greateſt number of the ſhips will have from two to four months demurrage to receive.

I ſhall ſet therefore, in the ſubſequent calculation, that ſum, which I ſuppoſe likely to ariſe, upon the general average, to each ſhip for demurrage, at £.1,500; and I ſhall, in the next place, try to find out what can fairly be ſaved in the freight-department, from a compariſon of what has nearly been paid on that account for ſeveral years paſt, with what the freights will amount to, according to the terms ſtated in theſe eſtimates; thereby to diſcover what has been paid beyond the juſt equivalent.

The Company received from *India* and *China* from the ſummer of 1767 * to the ſummer of 1773, both included, 104,987 tons of goods, which were brought home in 188 ſhips; and the money paid for bringing

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* The reaſon for going no farther back than 1767 was, becauſe it would have mixed peace-freight with that of war, which would not be drawing a fair compariſon.

To face p. 55.

A particular **STATEMENT** of all the Money paid for Freight, Out and Home, and for Demurrage, in the laſt Seven Years, from *March* 1767 to *March* 1774; ſhewing alſo the Average-Price *per* Ton of the net Goods brought home from *India* and *China* during that Period.

Number of ſhips arrived in each year.		Amount of each year's kintlege-tonnage.	Amount of the tons of net goods bt. each year.	Amount of each year's groſs tonnage.	Amount of each year's home-freight.	Amount of each year's out-freight.	Amount of demurrage paid for each year.	Total paid each year for the hire of ſhips.
		Tons.	Tons.	Tons.	£.	£.	£.	£.
1767 —	25	2000	14,620	16,620	433,721	5,236	45,897	484,854
1768 —	19	1520	9,897	11,417	305,067	8,193	19,489	332,749
1769 —	28	2240	13,995	16,235	432,944	15,341	39,604	487,889
1770 —	28	2240	15,781	18,021	463,996	4,685	36,228	504,909
1771 —	28	2240	16,041	18,281	471,678	6,132	47,293	525,103
1772 —	33	2640	18,518	21,158	552,990	2,012	55,733	610,735
1773 —	27	2160	16,135	18,295	485,409	1,445	37,512	524,366
Ships —	188	15,040	104,987	120,027	3,145,805	43,044	281,756	3,470,605

This Calculate makes the average-amount of the tons of net goods brought home each year, tons 14,998, and at £. 33 1 s. 1½ d. *per* ton on the cargoes from *India*, reckoning in the out-freight and demurrage.

Home — —	£. 3,145,805				
Out — —	43,044				
	£.3,188,849	this on the home-tonnage turns out after the rate of —	30	7	5½
Demurrage — —	281,756	equal — — —	2	13	8
	£.3,470,605	— —	£.33	1	1½

So that the Company have paid after the rate of £.33 1 s. 1½ d. *per* ton on the goods brought home in the laſt ſeven years, the goods carried out of *England* and their expence included, and in ſhort the whole charge of hireing the ſhips.

The average-amount of the demurrage for the ſeven years on 188 ſhips, comes to about £.1,500 upon each ſhip neareſt.

The average-amount of what each ſhip earned in the reſpective years.

1767	freight and demurrage of	25 ſhips	£.484,854	equal to	£.19,394	for each ſhip.
1768	D°	19 D°	332,749	D°	17,524	D°
1769	D°	28 D°	487,889	D°	17,425	D°
1770	D°	28 D°	504,909	D°	18,033	D°
1771	D°	28 D°	525,103	D°	18,754	D°
1772	D°	33 D°	610,735	D°	18,507	D°
1773	D°	27 D°	524,366	D°	19,421	D°

ing home the above goods, and for thoſe carried thither, amounted, under the article of freight, to £.3,188,849, which is equal to £.30 7 s. 5½ d. *per* ton on the returning cargoes; and the money paid on the ſcore of demurrage for the 188 ſhips came to £.281,756, which is after the rate of £.2 13 s. 8 d. *per* ton on the returning cargoes brought in the ſeven years; this makes the whole expence incurred for the hire of the 188 ſhips amount, on the average, to £.33 1 s. 1½ d. *per* ton on the net goods brought home from *India*, including all the charge of carrying out the exports from hence.

Paid for out-freight from 1767 to 1773 —	£. 43,044
Paid for home-freights —— —— ——	3,145,805
Total paid under the head of freight — —	3,188,849
or £.30 7 s. 5½ d. *per* ton on the goods brought home in the 7 years.	
Paid for demurrage in 7 years on 188 ſhips —	281,756
or £.2 13 s. 8 d. *per* ton on the goods brought home.	
Total expence of freight and demurrage in the 7 years —— —— ——	£.3,470,605
or £.33 1 s. 1½ d. *per* ton for bringing home 104,988 tons of net goods, and for carrying out to *India* 54,928 tons of goods, and ſtores.	

The goods brought home in the laſt ſeven years turn out, on an average, for each year 14,998 tons; and the goods that will be wanted from *India* and *China* *, as ſoon as the ſurplus teas and ſalt-petre, now in the warehouſes, are cleared off, or reduced to no more than the neceſſary reſerve, will amount to 14,440 tons of net goods to be imported each year, in order to keep up the ſales at the preſent ſtandard,

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* Goods that will be wanted annually to ſupply the ſales and ordnance, according to the preſent demand, as ſoon as the ſurplus teas and ſalt-petre are cleared off:

	Tons.	Tons.	Tons.
Bohea teas	4,390		
Green teas	2,500		
Raw-ſilk, China, *&c.*	400		
		7,290	
Bencoolen pepper about		1,700	
Net goods from *China* and *Bencoolen*			8,990
Bengal, *Madras*, and *Bombay* goods:			
Bengal and *Coaſt* bale and cheſt goods		2,260	
Bombay and *Mocha* ditto		590	
Malabar pepper		780	
Red-wood		120	
Salt-petre		1,700	
Total from the three preſidencies			5,450
Total amount of goods for the annual ſupply			14,440

and to ſupply the apparent demand. I ſhall now endeavour to ſhew the number of ſhips that will be required for the conſtant ſupply of ſuch a quantity of different ſorts of goods.

The ſhips of the largeſt ſize, of 880 tons burthen, are eſtimated to bring home 900 tons, and the ſhips of 720 tons burthen, are eſtimated to bring home 680 tons of net goods; provided the cargoes conſiſt only of common Boheas and Singlo teas (a little China-ware excepted); and from *Bencoolen* the large ſhip is computed to bring home 860 tons, and the ſmall ſhips 700 tons of pepper. It is alſo to be remembered, if 250 tons of raw-ſilk are laden from *China*, that quantity will occupy the ſame room as 450 tons of Singlo teas take up.

The ſhips of 720 tons, real meaſurement, are herein eſtimated to bring home, from the three preſidencies, the builder's tonnage, including kintlege. This aſſertion is founded on full 200 tons of ſalt-petre being laden on each ſhip from *Bengal* and *Madras*, and the reſt of the cargo to conſiſt of bale or cheſt-goods (a little red-wood excepted); and from *Bombay*, on the ſuppoſition of a ſufficient quantity of ſalt-petre being put on board to make no ballaſt wanted; and the reſt of the cargo to be bale or cheſt-goods, and part pepper.

	Tons.			Tons.
Ship-tonnage contained in nine ſhips of 880 tons each, and in two ſhips of 720 tons each				9,360
Com. Boh. and Sing. freight-t.	6,200	will require of ſhip-ton.	6,060	
Souch. Cong. and Hyſ. *ditto*	690	will require of *ditto*	740	
250 t. raw-ſilk, 150 t. China, *&c.*	400	will require of *ditto*	600	
Total of freight-t. from *China*	7,290	will require of ſhip-ton.	7,400	
Bencoolen pepper	1,700	will require of *ditto*	1,740	
Total of freight-tonnage wanted from *China* and *Bencoolen*	8,900	and will require of ſhip-ton.		9,140
Spare tons to allow for any alterations in the cargo, and for bad ſtowage				220

Ship-tonnage contained in nine ſhips, of 720 tons each, amounts to — 6,480

	Tons.	
The freight-tons of bale and cheſt-goods from *Madras*, *Bombay*, *Bengal*, *Mocha*, &c. eſtimated at — — —	2,830	
Mallabar pepper — — — — — —	800	
Red-wood about — — — — — —	120	
Salt-petre about — — — — —	1,700	
		5,450
Kintlege 85 tons *per* ſhip, making up ſhip-tonnage —		765
Ship-tonnage required for the above goods — — —		6,215
Total of ſpare tonnage to allow for any alterations in the cargoes, or for bad ſtowage - - - - -		265
		6,480

The ſums neceſſary on the foregoing calculations for the ſhips to earn from *China*, and the different parts of *India*, will be as follow:

9 ſhips of the largeſt ſize, at £.20,500 each	£.184,500	
6 ſhips of the ſmaller ſize, at — 17,700 each	—106,200	
5 ſhips *ditto* at — — — — — 16,900 each	— 84,500	
		£.375,200
20 ſhips demurrage at £.1,500 each — — — —		30,000
9 ſhips out-freight, 100 tons each, 11 ſhips at 60 tons each,		7,800
		£.413,000

Total expence of the out-freights, the charge of demurrage, and of bringing home 14,440 tons of net goods, which is neareſt equal to £. 28 12s. *per* ton on the goods brought from *India*.

	£.	s.	d.
Average-coſt of bringing home the goods *per* ton for the laſt ſeven years, taking in all charges paid for freight and demurrage, &c.	33	1	1½
Average-coſt of freight, according to my ſtatement, taking in all charges, will amount, on the returning cargoes, to *per* ton —	28	12	0
Saving *per* ton on the average of the laſt ſeven years — —	4	9	1½

Goods brought home in the laſt ſeven years, tons 104,987; which, at £. 4 9s. 1½d. amounts to £. 467,630; and produces an annual ſaving, on the medium of ſeven years, of £. 66,800 *per annum.*

Hence the ſum the Company will, in future, have to pay for freight and demurrage, ſo ſoon as the ſurplus ſtock of teas is cleared off, will amount to £. 413,000 a year to afford a fair and equitable price for the carriage of the goods and ſtores ſent from hence to *India*, and for bringing to *England* 14,440 tons of goods from thence. The difference between the prices here fixed, and thoſe that have been paid on the average for the laſt ſeven years, will produce a reduction of £. 4 9 s. 1½ d. *per* ton on the returning cargoes, which, according to the quantity of goods brought home, upon the average of the laſt ſeven years, will amount to an annual ſaving of near £. 66,800, in the articles of freight and demurrage; but this is only on a ſuppoſition of no unforeſeen accidents whatever ariſing in the year, and which, I am afraid, will never be found in practice.

Indeed, I have drawn the thread ſo fine, that the ſavings cannot be expected to equal the above ſum for any conſtancy.

For in the eſtimated prices I have gone as low as the Owners can, in reaſon, afford; and the goods required to be brought home, in the ſhips of the two ſizes, are as many, if not more, than the circumſtances and ſituations, that will unavoidably happen at times, can admit.

This was neceſſary to be premiſed; becauſe whatever the ſhips ſhall bring home, ſhort of the tonnage fixed in theſe calculations, will tend to leſſen the difference between the former and the preſent freights, and will conſequently become a reduction from the ſavings eſtimated at £. 66,800.

I ſhall, in the next place, proceed to compare the terms on which the freights were fixed laſt year, with the preceding eſtimate, and then examine wherein, and how much, they both differ from Sir *Richard Hotham*'s tender.

The freights of laſt year, 1773, were ſet at £. 26 10 s. *per* ton, for the goods brought from *Bengal*, *Madras*, and *Bombay*; and at £. 22 10 *s*. *per* ton for the goods brought from *China* and *Bencoolen* *;

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* It is to be remembered, that the *China* freight-tonnage is calculated from a cargo conſiſting only of common Boheas and Singlos; therefore, whenever raw-ſilk, Hyſons, Congo's, or Souchongs are laden in the the room of Singlo's, the freight-tonnage on ſuch ſhip will be brought conſiderably below the ſtandard fixed in theſe eſtimates: and the variation in the cargoes of *Bengal* bales, in particular, joined to the great difference between the room occupied by a ton of ſalt-petre, and a ton of bales of every denomination, will make ſome ſpare tonnage equally requiſite from the preſidencies.

paying freight for every ton of kintlege, at the ſame rate as is paid for the goods.

The 14,440 tons of goods to be brought home at theſe prices, in twenty ſhips, will amount to the following ſum, leaving at the ſame time that ſpare tonnage, which has already been mentioned to be neceſſary to anſwer the ſeveral circumſtances that will occaſionally ariſe, from a difference in the cargoes, and from hurry or neglect in the ſtowage.

From *China* and *Bencoolen* nine large ſhips, of 880 tons each, to carry 900 tons of net goods from *China*, and 860 tons from *Bencoolen*; and two ſmaller ſized ſhips, of 720 tons, to carry 680 tons of net goods each from *China*, and 700 tons from *Bencoolen*; ſuppoſing the *China* cargoes to conſiſt of no other goods but thoſe which ſtow to the beſt advantage.

Seven

China goods, the beſt aſſortments, freight-ton:		6,300
Two ſhips of 880 tons to bring pepper, each 860 freight-tonnage — — — —		1,720
Two ſhips of 720 tons each, to bring of *China* goods 680 freight-tonnage —— ——		1,360
		9,380

	Tons.				£.	s.
Pepper to be brought at whole freight - - - - - - -	1,518	at £.22 10	*per* ton		34,155	
Ditto upon half freight - - -	182	at —11 5	—	—	2,047	10
China goods of ſorts upon whole freight - - - - - - -	6,553	at —22 10	—	—	147,442	10
Ditto upon half freight - -	737	at —11 5	—	—	8,292	
			8,990			
Spare tonnage to allow for the additional room required when any part of the cargo conſiſts of raw-ſilk, Hyſons, Congoes, and Souchongs, more than is neceſſary for a cargo of Singlo's and Boheas, with a proviſion for bad ſtowage			390			

N. B. 250 tons of raw-ſilk will fill a ſpace nearly equal to what would contain 450 tons of Singlo's.

	Tons.		Tons.			£.	s.	
Kintlege of 9 large ſhips at	105	each	945					
Dº of 2 ſmaller ſhips at	85	each	170	—1,115	at	22	10	—25,088

Total amount of the *China* and *Bencoolen* freights on the terms of 1773, excluſive of the demurrage and out-freight - - - - - 217,225

Nine ſhips, 720 tons each, chartered at $\frac{1}{8}$ leſs than builder's tonnage, but herein eſtimated to bring the real meaſurement in freight-tons, the kintlege included; each ſhip will then be to bring, of net goods, 635 tons —— —— —— —— 5,715 tons.

	Tons.		£.	s.	£.
Net goods that will be wanted to be brought at whole freight, according to the annual eſtimate - - - - -	4,905	at	26	10	—129,982
Net goods to be brought at half freight	545	at	13	5	— 7,221
	5,450				
Spare tonnage	265				

Nine ſhips kint. at 85 tons each, 765 tons, at £.26 10 *s. per* ton	19,890	
		157,093
		£.347,318
The eſtimated demurrage of 20 ſhips at £.1500 each	£.30,000	
Nine large ſhips out-freight, at 100 tons each - -	4,500	
Eleven ſmall ſhips out-freight, at 60 tons each - -	3,300	37,800
Total amount of expence of carrying out the outward tonnage, and of bringing home 14,440 tons of net goods, according to the freights of laſt year; which is leſs than the amount by my eſtimate £.882		£.412,118

[illegible] if freighted on the terms offered by Sir *Richard* *Hotham*. According to his propoſals, that quantity of goods will be brought home, and the exports carried to *India*, for the following ſum:

	Tons.		£.	£.
Goods of ſorts from *China* - -	7,290	at £.21 *per* ton,	153,090	
Pepper from *Bencoolen* - - - -	1,700	- - 22 - - - -	37,400	
	8,990			
From *Bengal* and the coaſt of *Coromandel* - - - - -	3,580	- - 23 10 - -	84,130	
From the *Malabar* coaſt, goods of ſorts — — — —	1,870	- - 24 0 - -	44,880	
	14,450			319,500

		£.	£.	£.
Kintlege - -	905 tons at	21 0 - -	19,005	
	210 - -	22 0 - -	4,620	
	510 - -	23 10 - -	11,985	
	255 - -	24 0 - -	6,120	41,730
				361,230
Demurrage and freight outward the ſame as in other eſtimates - -				37,800
Total expence of freight and demurrage upon Sir *Richard Hotham*'s propoſals — — — — —				£.399,030

The net amount of the freight for each ſhip, when loaded from the different parts of *India* or *China*, will be as follows:

		On Sir *Richard Hotham*'s propoſals.	On the terms of laſt year.
		£.	£.
The large ſhip from *China*,	890 tons of goods for	20,895 —	for 20,914
The large ſhip from *Bencoolen*,	860 tons of goods for	21,230 —	for 20,576
The ſmall ſhip from *China*,	680 tons of goods for	16,065 —	for 16,706
The ſmall ſhip from *Bencoolen*,	700 tons of goods for	17,270 —	for 16,875
The ſmall ſhip from *Bombay*,	635 tons of goods for	17,280 —	for 17,887
The ſmall ſhip from *Bengal* and *Madras*, - - - - -	635 tons of goods for	16,920 —	for 17,887

The freight of the 14,440 tons, upon Sir *Richard Hotham*'s terms, will amount to £. 13,970 leſs than it will on my eſtimate; and to 13,088 leſs than on the prices the freights were ſet at laſt year.

However, according to my eſtimates, the 8,990 tons of goods, that will annually be wanted hereafter from *China* and *Bencoolen*, will be brought home, including the charge of ſending out a proportion of the exports to *India*, and every other expence likely to ariſe on that head, for £.239,900; and the ſame quantity will, on the terms of laſt year, amount to £. 238,825, and, according to Sir *Richard Hotham*'s propoſals, to no more than £.235,715; ſo that the difference is £.4,185, in favour of Sir *Richard Hotham*, and £. 1,075 in favour of the laſt year's freight; mine being ſo much higher than the other two from *China* and *Bencoolen*.

But in the freights from *Bengal*, *Madras*, and *Bombay*, the difference is ſtill greater between Sir *Richard Hotham*'s and my propoſals, whilſt the terms of laſt year, from the three preſidencies, will be nearly the ſame with mine upon the whole. For the 5,450 tons to be brought from *Bengal*, *Madras*, and *Bombay*, will, ac-

cording

cording to my propoſals, come home for £.173,100, and after the rate the freights were let at laſt year for £.173,293; but, on Sir *Richard Hotham*'s terms, the ſame quantity of goods will be brought for only £.163,315; ſo that the great difference in favour of Sir *Richard Hotham*'s propoſals lays with the bale-ſhips; but then it muſt be obſerved, that Sir *Richard*'s dependance on an equivalent for his riſk and expence reſts entirely on the ſhips carrying more goods than, in my opinion, they will be able to ſtow; no allowance at the ſame time being made in his eſtimate for any ſpare tonnage.

Every gentleman acquainted with the coaſts of *India*, and the bay of *Bengal*, muſt allow that there is much impropriety in ſetting the freight from *Bombay* higher than that from *Bengal*, as Sir *Richard Hotham* propoſes; and this concluſion muſt, at all events, be drawn from that gentleman's tenders, that the terms from ſome of the ſettlements are too high, or elſe from others they are made too low.

Theſe calculations are framed on a ſuppoſition of no extraordinary accidents ariſing to delay ſhips abroad beyond the uſual time of returning; ſuch, as for tranſporting troops or ſtores to different parts of *India*,

India, or other circumſtances which the exigencies of the government may require; therefore, when a reaſonable allowance is made for all thoſe purpoſes, the ſum, that will annually be ſaved on the former freights, will not probably exceed £.50,000 until the ſhips can be built, fitted, and ſtored, cheaper than the preſent average-expence of the out-fits will admit.

It will be an object worthy ſome conſideration, before any new ſhips are built, to fix the conſtruction of them with great exactneſs. In the interim, the ſhips of 880 tons, real meaſurement (and all other ſhips of different ſizes to be taken in the ſame proportion) ſhould be let to *China* and *Bencoolen* to bring that meaſured tonnage home, including kintlege *; and what further quantity of goods the ſhip may be able to ſtow, to be taken in at half-freight; and the freight to be paid for the kintlege to be ſettled at half the price *per* ton of the goods brought on the chartered tonnage: hence the goods brought as ſurplus tonnage, and the kintlege being paid for upon the ſame terms, the goods brought over and above the chartered tonnage would only amount to whole freight when joined to the freight paid for the kintlege. Under theſe regulations, if a ſhip of 880 tons burthen is ſent to *China* and *Bencoolen* †, the Owners might afford to bring home the quantity of net goods, ſtipulated in the chartered tonnage, at £. 23 *per* ton, paying for the kintlege £. 11 10s. *per* ton, and the ſame for the goods brought as ſurplus tonnage. This would bring the amount of the home freight to £. 20,500, or thereabouts; provided the ſhip received that quantity of ſurplus freight that has been propoſed. On the other hand, if any unforeſeen accident ſhould ariſe to prevent the lading ſurplus tonnage, the Company would not be to pay for tonnage they did not occupy; and which they would do, under the preſent terms, ſhould at any time ſurplus tonnage not be

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* Kintlege is iron-ballaſt laid on board by the Owners, at the direction of the Company, in order to make more room for goods, as it takes up much leſs room than any other ballaſt.

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† *China* and *Bencoolen* ſhips of 880 tons burthen, let for to bring that tonnage, including kintlege, with what ſurplus there is room for:

	Tons.		£.	*s.*	*d.*	£.
This will make	775	of goods at	23	0	0	17,825
At half freight	125		11	10	0	1,437
Kintlege	105		11	10	0	1,207
						£. 20,469

laden, as the kintlege is paid for at whole freight. In order to bring the freight of the ſhip of 720 tons, real meaſurement, to produce £.16,900 from *China* and *Bencoolen*[*], it will require the goods to be brought upon the chartered tonnage to be paid for at £. 24 *per* ton, and the kintlege and ſurplus tonnage at £. 12. The ſhip of 720 tons, real meaſurement, let to *Bombay*[†] for 665 tons, including kintlege, will be to bring home 580 tons, of net goods, at whole freight; for which the ſhip ought to receive £. 26 *per* ton, and half freight for the kintlege, and for what-

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[*] A ſhip of 720 tons from *China* or *Bencoolen*:

	Tons.		£.	£.
Let to bring net goods	625	at	24 —— ——	15,240
Goods at half freight - -	55	at	12 —— ——	660
Kintlege at half freight	85	at	12 —— ——	1,020
				£.16,920

[†] A ſhip of 720 tons burthen, chartered to bring from *Bombay* 665 tons, including kintlege:

	Tons.		£.	£.
To bring	580	at	26 *per* ton — — —	15,080
Half freight	55	at	13 —— —— ——	715
Kintlege - -	85	at	13 —— —— ——	1,105
				£.16,900

ever goods ſhe brings beſides; and if the tonnage of the goods, upon whole and half freight, including kintlege, amount within 5 or 10 tons of the burthen of the ſhip, according to her real meaſurement, the Owners will, at thoſe prices, have a proper return. If the ſhip of this burthen, of 720 tons, is chartered to bring from *Bengal* and *Madras* 665 tons [*], including kintlege, with what ſurplus ſhe can ſafely ſtow, ſhe will be obliged to take in 580 tons of goods, for which the Owners ſhould receive £. 27 10 s. *per* ton, with half freight for the kintlege and ſurplus tonnage; and if about 630 tons of net goods ſhall be laden on the ſhip, the freight will be a reaſonable return to the Owners.

A ſhip of ſomething leſs burthen, than the one here propoſed, would be able to abate in proportion on the groſs ſum to be received for the voyage; ſo that, although

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[*] From *Bengal* and *Madras* ſhips of 720 tons, chartered at 665, including kintlege:

	Tons.	£.	s.	d.	£.
To bring net goods,	580 at	27	10	0 ——	15,950
D° at ½ freight	50 at	13	15	0 ——	687
To carry kintlege - - -	85 at	13	15	0 ——	1,169
					£. 17,806

ſhe did not receive quite ſo many goods, the ſame prices would equally anſwer. The ſhips, hired upon the propoſed terms, will be ſure to return fully laden, and all the ſettlements will become equally advantageous for the Owners. The prices which are propoſed to be paid for freight, from the different parts of *India*, and from *China*, in theſe calculations, are no more, according to the original coſt of the ſhips, and the expence of their ſeveral outfits, upon the different voyages, than what, in my opinion, the Directors may conſiſtently offer as a juſt and reaſonable return to the Owners. Any attempt to beat down the freight, below the fair and equitable equivalent, is not only beneath the dignity of the Company, but is very contrary to their real intereſt; becauſe it can tend to no other end, than to fix a ſettled enmity between the parties, which will break out in contention upon every frivolous occaſion; and would be ſure to create ſeparate intereſts in a concern wherein both parties ſhould be united. Such ſteps muſt be liable to ſubject the Company, at ſome period or other, to great inconvenience from the want of ſhips; for the neceſſary quantity of tonnage cannot be ſecurely kept up, without thoſe, who are to build, ſhall be certain of a reaſonable return for what they lay out.

I have in theſe Eſtimates ſuppoſed, that 20 ſhips will abſolutely be required to bring home that annual ſupply of goods which the preſent ſales demand, ſuppoſing the ſhips the largeſt ſizes the different branches of the trade will admit. I reckon two ſets of ſhips and an half, or rather more, to be the leaſt number that ought to be kept up; for though it may ſometimes be poſſible to get moſt of the returning ſhips ready to go out again the ſame ſeaſon they come home, ſtill ſo many unforeſeen circumſtances will, at different times, ariſe, as will often prevent ſuch a meaſure taking place. In time of war it would be quite impracticable; for a war would even render two ſets and an half inſufficient; ſo that to reduce the ſhips below that number would be expoſing the Company's trade, at ſome period or other, to an improvident hazard, very inconſiſtent with prudence or true œconomy. The ſmalleſt number of ſhips neceſſary, therefore, to be kept up, will be 52 or 53; and muſt meaſure full 41,000 tons (*viz.*)

	Tons.
One ſet conſiſting of 9 ſhips of about 880 tons each	8000
Eleven ſhips of about 720 tons each	8000
To make up one ſet	16,000
The ſame tonnage for to make up another ſet	16,000
The ſpare tonnage	9,000
The amount is	41,000

neceſſary to be kept up for the ſupply of the annual demand, according to the preſent ſales, and to barely keep up a neceſſary reſerve in time of peace: ſo that, in my opinion, any attempt to reduce the tonnage below the preſent ſtandard of 45,000 tons, as fixed by parliament, would be rather premature, unleſs the demands for the goods fall off, ſo as to decreaſe the annual ſales, and conſequently the amount of the future returns; for if the demand for goods continues as at preſent, and a war ſhould break out, I am very certain 45,000 tons will ſcarcely be ſufficient to ſupply your demand of tonnage.

Thus, having done with the tonnage of the goods from *India*, I ſhall next take under conſideration the tonnage outward; that is, the ſtowage of goods and ſtores ſent from *England* to *India*, which has likewiſe been very much agitated by the Proprietors, and has occaſioned many unfavourable impreſſions to be entertained about the management of the ſtowage of the ſhips outward-bound. I ſhall confine my aſſertions to what has fallen under my own particular direction; though the general obſervations I have had in my power to make, from many other ſhips, would equally tend to confirm my ſentiments on the ſubject.

A ſhip of 722 tons, real meaſurement, carried to *Bengal* 440 tons of goods on the Company's account, beſides the 80 tons of kintlege, always reckoned into the chartered tonnage: there was room in the hold for about 60 or 70 tons more than were laden, after the rate of 40 cubic feet to a ton; the water and proviſions of all kinds, together with the private trade, were in the hold, and nothing betwixt decks but the Company's ſpars, and the uſual ſtores belonging to the ſhip; ſo that this ſhip's hold would, upon her voyage to *Bengal*, have been full with 580 or 90 tons upon the Company's account, and nothing in it beſides but what was duly authorized:

thorized: and then the ſhip would have been ſhort of the tonnage ſhe meaſured on the Company's account 132 tons. The ſame ſhip went afterwards to *Bombay* ; ſhe had in 80 tons of kintlege, and 533 tons of goods, which made the Company's tonnage altogether amount to 613 tons, and conſequently was ſhort of her real meaſurement, on the Company's account, 109 tons. The ſhip was entirely full in the hold, and betwixt decks there was only the uſual ſtores of the ſhip, and 10 tons of ſpars, belonging to the Company, which made the goods in the hold, on the Company's account, 523 tons; and tho' the above ſpars were all the goods that were ſtowed betwixt decks, there remained no more room upon the lower deck, for the accommodation of 90 or 100 ſoldiers, than was abſolutely neceſſary; for the gang-caſks were all ſtowed upon the upper decks, and the ſhip was as full as ſhe ought, in prudence, to be loaded or lumbered, to go to ſea in the winter-time, and to be able to ſhelter her people. The anſwer, that will probably be made to this, will be, that ſeveral ſhips have gone to ſea much fuller than I deſcribe, and that, if the Company do not fill up every part of the ſhip, other perſons will do it. All this may have been true ſometimes; but, I believe, not ſo often as has been aſſerted; however, it makes nothing for the argument; it is, doubtleſs, highly proper for the Company to draw the line, and, when drawn, to take care it is not infringed. As the paſſengers increaſe the quantity of water and proviſions neceſſary to be put on board, the Company always reckon thoſe, who are ſent out for their ſervice, into the tonnage, the ſame as goods, at a certain rate fixed between the contracting parties. The ſhips of the ſmaller dimenſions will ſtow, upon the lower deck, 80 or 90 ſoldiers, and the largeſt ſized ſhips 140 or 150 with equal convenience. The lower deck is the only place where large and long ſpars can conſiſtently be ſtowed; and as a conſiderable number of thoſe are uſually ſent, both to *Bombay* and *Bengal*, the cable-tiers are obliged to be made very long, in order to enable the ſoldiers to hang their hammocks over them; ſo that they generally extend from the fore to the after-hatchway. But, admitting the ſoldiers were out of the queſtion, if large cables, new and ſtiff, ſhould be coiled ſhort and high, in cold weather, very fatal conſequences might enſue; therefore, with a number of ſpars riſing a foot and an half from the deck, from the fore to the after-hatchway, with a lazaretto, gun-room, ſail-room, and tradeſmens ſtore-rooms, partitioned off, upon the lower deck, to diſpoſe of all the different articles for which thoſe places are appropriated, and from 80 to 100 ſoldiers birth'd along the deck, there cannot, with any propriety, be much room left for goods; beſides, an attempt to fill that deck, beyond what is here deſcribed, muſt be highly injurious to the health of the ſoldiers, and of courſe to the intereſt of the Company; for if that deck becomes lumbered and crowded with goods, how is it to be cleared? how is that ſtench, ariſing from foul air, to be prevented? when there is little or no room left to move things from ſide to ſide, to get at the deck, cloſe into the ſides, in order to waſh, and ſprinkle it with vinegar. With every endeavour, it is found difficult to preſerve a free circulation of air along the deck, whilſt 80 or 100 men are ſleeping there. If the after-part of the deck was to be ſtowed up in the ſame manner outward-bound, as it is homeward-bound, the ſcuttles, in the gun-room, would be of no uſe; but whilſt the paſſage on that deck is left clear, and not lumbered with packages of any kind, they are of great ſervice to promote the draft of freſh air along the deck: the want of a free circulation of air upon the lower deck, and of the opportunity of cleaning it, muſt often prove fatal to the lives of many of the ſoldiers; at the beſt ſuch a ſituation would expoſe them to the hazard of being landed in *India*, in a miſerable weak condition, and would be liable oftentimes to introduce ſickneſs into the ſhip, that may never be eradicated again in the voyage. The ſame circumſtances that have been proved, on the returning cargoes, will, in a certain degree, be found to ſubſiſt in the cargoes carried out from *England*; for the various goods and ſtores ſent to the ſeveral ſettlements differ ſo conſiderably, as to the cubical ſpaces occupied by them, that the ſtandard of tonnage will not be taken in the ſame ſhip to all the different places. The meaſurable goods, indeed, are all reckoned at 40 cub. feet to a ton; but the weighable goods differ greatly as to the room they take up. For inſtance, copper, iron, lead, and ſteel, do each of them take up but little room, when compared with moſt other articles; therefore, if the quantity of theſe articles is leſſened, and the tonnage increaſed in naval ſtores, cloth, bales, and other bulky goods, it will make a very material difference in the ſtowage; ſo that the ſhip will be filled with a leſs number of thoſe tons by which the freights are calculated.

It is in general believed, and indeed plainly appears, that the tonnage of the goods carried out by the *York*, upon the Company's account, did conſiderably exceed the quantity carried out by other ſhips, allowing for the proportional difference between them in reſpect of ſize.

The *York* was contracted to meaſure 758 tons; at leaſt, this was the dimenſion, as to tonnage, which this ſhip was reported to be built, being the utmoſt extent that the order of the Court, in *June* 1770, allowed. Almoſt every ſhip will throw out ſomething, in the raiſing of her frame, beyond the original contract; but the *York*'s real meaſurement, as appears from the given dimenſion, had been enlarged to 808 tons; it has been aſſerted much more. The ſhip *York* carried out under the Company's tonnage 829 tons, 92 tons of which was kintlege, and 737 tons conſiſted of goods and paſſengers; ſo that ſhe exceeded the builder's tonnage, in the quantity of goods, &c. on the Company's account, 21 tons; ſuppoſing the ſhip to be 808 tons. It is to be obſerved, that the ſhip *York** carried 12 tons of kintlege more, and ſtowed 75 tons more of her cargo betwixt

		Tons.
* The *York*'s real meaſurement		808
The other ſhip *ditto*		722
Proportional difference between the two ſhips		86
The *York* meaſured 808 tons, and carried for the Company	829	
Deduct the kintlege	92	
Net goods on the Company's account		737
The ſhip of 722 tons carried	613	
Deduct kintlege	80	
Net goods on the Company's account		533
Difference of the quantity ſtowed in the two ſhips		204
Deduct the difference in the ſize of the two ſhips		86
Carried by the *York* more than the other ſhip, beyond the proportional difference		118
Net goods in the ſhip of 808 tons		737
Stowed betwixt decks		75
Stowed in the hold of the large ſhip		662
Stowed in the ſmaller ſhip of 722 tons	533	
Stowed betwixt decks	10	
Stowed in the hold of the ſmall ſhip		523

Stowed

twixt decks, than the former-mentioned ſhip; all which circumſtances will reduce the quantity of goods belonging to the Company, and contained in the *York*'s hold, to only 53 tons beyond the proportional difference between the two ſhips. Now the *York*, to prove a point, went further than was conſiſtent, in my opinion, either with prudence or ſafety; therefore, when it ſhall be conſidered, that the quantity of ſtores ſtowed upon the lower deck deprived the ſoldiers of the neceſſary room to reſt and ſleep in; that the voyage did not require the ſtock of water outward-bound, wanted for moſt others; that both water and proviſions, which uſually have been in the hold, were ſtowed upon the decks; and that the victualling bill was

	Tons.
Stowed in the hold of the ſhip of 808 tons, net goods	662
Stowed in the hold of the ſmaller ſhip of 720 tons	523
Stowed in the hold of the great ſhip more than in the hold of the ſmaller	139
Deduct the proportional difference	86
Stowed by the large ſhip more than by the ſmaller ſhip, beyond the proportional difference	53

not quite completed. When all theſe articles are collected together they will be a full balance, I apprehend, for the 53 tons; and the quantity of goods and ſtores in the hold will be found not to exceed the quantity ſtowed in the holds of many other ſhips, after allowing for the proportional difference between them: ſo that the cauſe of this apparent difference may be diſcovered, without drawing cenſure or reflections on any man or body of men. The experiment has now been made of the utmoſt that a ſhip can take in outward-bound; but in any other reſpect than as an experiment, which, in my own opinion, was carried too far, ſurely the conteſt about the tonnage outward was rather unneceſſary, as the tonnage ſent annually from *England*, eſpecially in time of peace, is greatly ſhort of the quantity to be brought home every ſeaſon; and it is for the intereſt of the Company not to give too large a portion to any one ſhip; becauſe an equal diſtribution will leſſen the money to be paid on that head, as every ſhip is now to carry to the amount of 500 tons and upwards freight-free.

	Tons.
A ſhip of 864 tons is chartered to carry, freight-free, outward-bound — — — — —	657
Suppoſe ſurplus-freight — —	100
	757
A ſhip of 720 tons is chartered to carry free outward-bound — —	540
Suppoſe ſurplus-freight — — —	60
	600
9 ſhips, each carrying 757 tons —	6,813
11 ſhips, each carrying 600 tons -	6,600
20	13,413

Hence the 20 ſhips will carry in time of peace, without being lumbered, a very conſiderable quantity more of tonnage than is wanted; the annual average-amount of the former years not having exceeded 11,000 tons, with a ſquadron of men of war in *India*; and when no men of war are there, the outward tonnage will be ſtill leſs; therefore, whilſt this is the caſe, it muſt be very imprudent to ſuffer any of the ſhips to be lumbered in ſuch a manner as not to leave ſufficient room upon the lower deck for the ſoldiers.

I have endeavoured to ſhew the coſt and expence of maintaining ſhips of the different ſizes, through the ſeveral voyages they are deſigned to make; and thereby to point out what may, conſiſtently, be ſaved by the regulations to be adopted in future, when compared with the freight of the laſt ſeven years. Now the utmoſt that would be gained by taking away all privilege from the commanders and officers, in order to pay them in lieu thereof a certain ſum, ſuppoſing the ſtowage of their private trade in each ſhip homeward to occupy the ſpace of 50 or 60 tons, which is allowed for that purpoſe in theſe eſtimates; this would, at £. 22 *per* ton, amount to £. 1,200 or £. 1,300 a ſhip; but, if paid for at half freight, will be no more than half that ſum: the ſaving, however, allowed at whole freight-price, would not, on 20 ſhips, amount to more than £. 24 or £. 25,000 the utmoſt; making rather more than the difference of one large ſhip, whilſt an allowance of £. 4000 a voyage to each ſhip, the ſum that has been propoſed, would amount to £. 76,000 upon

19 ſhips; ſo that to ſave £. 24 or £. 25,000 the outſide, an expence of £. 76,000 would be incurred; but this would not be the only loſs in conſequence of ſuch a ſtep; for the Company would be deprived of about £.20,000 a year, levied as duties upon the private trade; they would likewiſe loſe the duties paid in *India* upon the private trade carried from hence, and landed from the ſhips at the different ſettlements, which may be ſet at £. 10 or £. 12,000 more. To this alſo may be added what the Company gain by £.150,000 paid into their caſh in *India* by the commanders and officers of the ſhips; this money the Company has the uſe of, until the prompts become due upon the ſale of the very goods purchaſed with the money ſo paid in. To this may further be added the loſs the nation would ſuſtain by £. 150,000 or £.200,000 each year hitherto laid out in the manufactures of this country, being diverted into ſome foreign channel; for it is in vain to ſuppoſe the Company could properly contract for, and provide ſuch a variety of ſmall articles, of the beſt aſſortments; many of them periſhable, the qualities, from the manner in which the Company only could contract

for the goods, would be often of the inferior ſorts, and the neceſſary care would never be taken of them: therefore, they would only be put into warehouſes abroad, to decay for want of purchaſers, who would naturally go where the beſt of the kind could be procured; which would never be found in the Company's aſſortments of the different commodities for eating, drinking, and a variety of other articles far too many to be enumerated here; and which circumſtance would be a ſtrong inducement to foreign trading nations to ſupply them. I am thoroughly convinced, that this alteration would be a ſtep highly impolitic to attempt; as, I apprehend, it would be ſo far from anſwering any ſalutary or beneficial purpoſe, that, on the contrary, much loſs might ariſe from it in the end.

It, doubleſs, is evident, that three ſhips of the largeſt ſize, each of the burthen of 880 tons, will bring from *China*, or *Bencoolen*, the ſame quantity of goods, within about 20 tons, that four ſhips of 720 tons each can ſtow; ſo that by employing ſhips of about 900 tons burthen for the trade from thoſe two places, in preference to ſhips of about 700 tons, a ſaving will ariſe to the Company of £. 5,700, in the bringing home £. 2,700 tons of goods; and conſequently a ſaving on the freight of the goods to be brought annually from thoſe places in future, of about £. 19,500; therefore, as long as this difference remains, the trade to *China* and *Bencoolen* muſt be carried on by ſhips of the largeſt dimenſions now employed.

As it is not propoſed to employ ſhips of 900 tons to *Bengal*, and in the coaſt-trade, the compariſon between them and the ſmaller ſhips, with bale-cargoes, is uſeleſs. Whenever that time comes round, wherein it will be requiſite to build again, in order to keep up the neceſſary ſupply of tonnage, it will be a conſideration deſerving the moſt ſerious attention, to determine on the ſize or ſizes that will beſt anſwer the different purpoſes for which they may be wanted: whenever that ſhall be fixed, the length, the breadth, and the mould cannot be too accurately aſcertained; the maſts, the ſails, and rigging ſhould alſo be carefully fixed, as to their dimenſions; for the alterations of that kind, when left too much to caprice and whim to decide, greatly contribute to increaſe the expence; all which muſt ultimately fall upon the Company.

Wherever the navigation, and the too rich value of the cargo, do not make the great ſhips improper for the ſervice, they muſt be employed in preference to ſmaller ſhips, whilſt ſo conſiderable an advantage reſults thereby to the Company. But if ſhips of from 650 to 700 tons, full meaſurement, can, by any reduction of the ſcantlings, by leaving the timbers a little further aſunder, and by ſkinning them with plank of the ſame thickneſs as formerly, be reduced ſomething in the price; and if the maſts, ſails, and rigging can alſo be brought back to the ſame proportional ſtandard by which they were regulated 20 or 30 years ago; ſo that the coſt of ſhips from 650 to 700 tons may amount, clear to ſea, to £. 17 or £. 1800 leſs than the preſent expence of their firſt outſet; the goods would then come home, upon the ſmall ſhips, on the ſame terms that the great ones can afford to bring them: for the large ſhips, I am very apprehenſive, are more likely to increaſe in their expence, than to be ſailed cheaper than they are at preſent.

I am rather, upon the whole, inclined to believe, that by ſome regulations the expence, which now attends fitting out the ſmaller ſhips, may be reduced conſiſtently. Sure I am, that the general utility likely to ariſe from building only the ſmaller ſhips in future, makes the trial well worth the attempt.

The firſt object with the Company is, without doubt, to bring their goods home upon the cheapeſt terms poſſible: the next conſideration ſhould be, to bring them home upon the moſt advantageous terms, for the general intereſt of the nation. This laſt meaſure does certainly conſiſt in expanding the carriage as much as can conveniently be done; for the increaſe of ſeamen, of artificers, and manufacturers employed in the different branches of work to conſtruct and complete a ſhip for the ſea; and likewiſe an increaſe in the quantity of proviſions, taken from the produce of the lands, for the ſupport of crews; theſe circumſtances, joined to the manufactures exported from one country to another, conſtitute the only balance to be brought as an equivalent for all thoſe branches of foreign trade, which every commercial ſtate engages in: for whether the goods brought from any foreign country are purchaſed by ſilver ſent from home, by bills of exchange drawn from abroad, or by money borrowed at the markets upon ſecurities, for the payment of which ſums the credit of the trader ſtands pledged; whatever the annual amount of thoſe foreign goods ſhall exceed the annual produce of the manufactures exported from home, and of ſuch a part of the imports as are afterwards re-exported; ſo much muſt the balance at the end of every year appear to ſtand againſt a commercial country, in every branch of its foreign trade. This purchaſe of, or exchange for foreign merchandize, can only be made up to every trading ſtate whenever the exports are below the imports, by thoſe advantages ariſing from the carriage of the goods; which carriage, experience has evidently ſhewn, from the hiſtory of all commercial ſtates, to have been far more beneficial to the country, than the mere gain ariſing to the merchant from the profits of his ſales. For it is only by the induſtry which it awakens, that foreign trade becomes, in any degree, beneficial to a country.

I have now done with this ſubject, and do ſincerely hope, that no gentleman, who thinks it worthy his attention, from being in any-wiſe intereſted, either as a Proprietor or an Owner, will take my aſſertions upon truſt. If, after a ſtrict examination, they ſhall not be found conformable to truth and right reaſon, however I may be mortified to find my labours thrown away, I ſhall be contented to ſee them openly refuted. In aiming to correct one error, it too often happens, that men run into the contrary extreme: it is amongſt the imperfections of our nature to ſuffer our zeal to miſlead us; and opinions alone never ought to decide where truth may be diſcovered by a reference to facts. The inveſtigation of truth, upon many occaſions, is painful and laborious; but, unleſs that is carefully done, we never ſhould pronounce with certainty. For concluſions drawn from too curſory a knowledge of things will inevitably lead us to ſubſtitute ſometimes conjectures for facts; in which caſe we are not only liable to deceive ourſelves, but thoſe alſo, who are induced to pin their faith on what we venture to aſſert.

FINIS.

ERRATA.

P. 10. l. 12. del. comma after *cotton* ; ib. l. 28 del. *or*.

P. 11. l. 27. for *cub. f.* read *cwt*.

P. 14. l. 15. place a ſemicolon after *impoſſible*, and del. ditto after *weight* ; ib. l. 22. after *bales* read 1,245.

P. 17. l. 28. for 2232 read 22,032.

P. 32. laſt l. put a ſemicolon after *ſalt-petre*.

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